



Gaming as Therapeutic Modality for Military Veterans: Evidence, Mechanisms, and Program Design

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Abstract: This study synthesizes interdisciplinary evidence on game-based interventions for military veterans, mapping neurological mechanisms to clinically relevant outcomes while outlining design principles for community programs that leverage interactive media. The review characterizes how structured gameplay supports emotional regulation through attentional control, predictable feedback schedules, and reward-mediated learning that elevates motivation and mood; links to dopaminergic signaling and reduced rumination suggest plausible pathways for affective stabilization. Executive functions receive targeted engagement via strategy, puzzle, and action mechanics that demand working memory, cognitive flexibility, inhibition, and rapid decision-making, providing ecologically valid practice with measurable transfer to daily functioning. Social architectures in multiplayer platforms and veteran-centered guilds reconstruct mission-oriented cohesion, improve perceived belonging, and decrease isolation, especially when paired with moderated peer support. Adaptive accessibility—exemplified by modular controllers, alternative input devices, and custom mappings—enables participation for veterans with mobility or sensory limitations and doubles as engaging adjunctive therapy for motor relearning and coordination. Virtual reality exposure systems operationalize graded, therapist-controlled re-engagement with trauma cues, combining presence, controllability, and biofeedback to enhance adherence and symptom reduction. Risk management addresses overuse, sleep disruption, and avoidance by embedding gaming within accountable routines, transparent goal-setting, and clinician or peer oversight. The article culminates in a translational framework—Veterans Play & Heal—that integrates creative game design workshops, therapeutic play sessions, adaptive equipment libraries, and museum or arts partnerships to align entertainment technology with rehabilitation, resilience, and identity reconstruction.

Keywords: *Veteran health, Therapeutic gaming, Virtual reality exposure therapy, Adaptive accessibility, Executive function.*

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1. Introduction

Video games have emerged as a salient cultural medium and a flexible therapeutic adjunct in the lives of post-9/11 veterans, who navigate elevated risks of posttraumatic stress symptoms, chronic pain, and social disconnection following service. Population-facing data indicate that many U.S. veterans consciously employ games to decompress, manage stress, and sustain ties to peers—patterns consistent with self-regulatory coping and mood management frameworks (ESA, 2025). Within Department of Veterans Affairs (VA) programming, community initiatives and peer-led play have been leveraged to reduce stigma, enable low-threshold engagement, and scaffold crisis support pathways (Hinely, 2023; Rosen, 2024). Concurrently, the 2023 VA/DoD Clinical Practice

Guideline (CPG) for PTSD, along with clinician-oriented summaries, emphasize evidence-based exposure therapies and identify technology-enabled modalities as promising complements when integrated with established care (Lang et al., 2024). Taken together, these developments situate contemporary gaming within a broader ecosystem of veteran health services, where leisure, social capital, and clinical practice intersect. The convergence is not merely cultural: digital play affords repeated, structured, and controllable interactions with emotionally salient content—conditions that align with basic principles of exposure, habituation, and skills rehearsal. In online multiplayer contexts, mission-like coordination can replicate familiar military task structures, potentially reinforcing identity continuity and collective efficacy (Rosen, 2024). Consequently, a rigorous appraisal of therapeutic



affordances—and their boundaries—has become a timely priority in veteran-centered behavioral health research.

Neuroscientific and clinical literatures from 2023–2025 further substantiate how game-based experiences can engage attention, executive processes, and affect-regulatory circuits in ways relevant to veteran recovery. Videogame training has been shown to improve attention and clinical well-being while modulating hippocampal–prefrontal functional connectivity, suggesting plasticity-driven mechanisms that plausibly underpin resilience gains (Becker et al., 2024). In trauma-focused care, virtual reality exposure therapy (VRET) and VR-augmented protocols can deliver high-fidelity sensory cues and graded controllability, thereby strengthening emotional engagement and inhibitory learning compared to imaginal exposure alone (Beidel et al., 2024). Recent randomized clinical trial data in veterans demonstrate that pairing immersive warzone-related VR with transcranial direct current stimulation (tDCS) yields clinically meaningful reductions in PTSD symptoms that accrue over time, highlighting a translational pathway whereby “game-like” environments can enhance standard interventions (van ’t Wout-Frank et al., 2024). VA’s 2024 Immersive Technology literature compendium catalogues expanding use cases across mental health and rehabilitation, signaling institutional readiness to evaluate and scale validated implementations. Importantly, the same design features that sustain engagement—clear goals, immediate feedback, and adaptive challenge—map onto behavioral activation principles that counter anhedonia and avoidance. Narrative-rich or strategy-based titles also recruit planning, working memory, and cognitive flexibility, functions frequently impacted by trauma and chronic stress. Together, these findings motivate an integrated research program that treats gaming as a configurable intervention platform rather than a monolithic exposure.

Despite these advances, three unresolved issues warrant systematic attention: evidentiary fragmentation, implementation equity, and risk governance. First, effect sizes and methodologies vary widely across studies and settings, complicating translation from laboratory protocols or pilot programs to routine practice; contemporary guidance accordingly recommends adherence to first-line psychotherapies while encouraging methodologically rigorous evaluation of adjunctive technologies (Lang et al., 2024; Schnurr et al., 2024). Second, accessibility constraints—spanning hardware, controller interoperability, and in-game design—can exclude veterans with physical injuries or neurodivergent profiles, underscoring the need to operationalize universal design and to measure usability as an outcome rather than a presupposition (Hassan, 2024; Martinez et al., 2024). Hardware innovation is encouraging yet uneven: platform makers continue to expand adaptive ecosystems, but consistency, affordability, and cross-platform compatibility remain barriers for many users (Team Xbox, 2024). Third, while most veterans use games adaptively, the literature documents circumstances in which excessive or escapist play correlates with isolation, sleep disruption, and diminished functioning—risks that magnify when gaming substitutes for, rather than complements, care (Schnurr et al., 2024; ESA, 2025). Program design must therefore include screening, stepped-care escalation, and clear handoffs to evidence-based treatments. Equally, evaluation must track not only symptom change but also participation, social connectedness, and functional outcomes meaningful to veterans. Addressing these issues requires convergent methods, stakeholder co-design, and pragmatic trials embedded in health systems.

The present article addresses these needs by synthesizing recent evidence across five action domains—emotional regulation, cognitive engagement, social connection, adaptive access, and therapeutic integration—and by advancing a translational framework for veteran-centered implementation. First, the review distills mechanistic and clinical findings to specify which gaming affordances map to which therapeutic targets and for whom. Second, the article outlines an implementable “Veterans Play & Heal” model that layers peer-led gaming, adaptive equipment access, and clinician-supervised exposure components, aligned with VA/DoD CPG priorities. Third, the framework incorporates risk-mitigation protocols—screening for problematic use, sleep hygiene, and crisis routing—without pathologizing normative play. Fourth, exemplar programs are paired with evaluation blueprints emphasizing feasibility, fidelity, equity, and patient-reported outcomes. Fifth, the article proposes governance and procurement guardrails for accessible hardware and content curation within VA and community partners. Finally, the synthesis closes with a research agenda prioritizing hybrid effectiveness–implementation trials and open infrastructure for reproducible evaluation. Collectively, this approach aims to convert a diffuse evidence base into a coherent, ethically grounded, and scalable programmatic strategy for veterans.

2. Literature Review

The literature depicts digital games as a viable adjunct for regulating traumatic stress responses in veterans through structured, immersive tasks that scaffold attentional deployment and perceived control. Randomized clinical evidence in 2024 indicates that pairing virtual reality (VR) exposure with concurrent transcranial direct current stimulation (tDCS) yields clinically meaningful reductions in posttraumatic stress disorder (PTSD) symptoms among U.S. veterans, alongside accelerated autonomic habituation to warzone cues (van ’t Wout-Frank et al., 2024). Parallel work on imagery-competing interventions demonstrates that brief, game-like visuospatial tasks—such as Tetris with mental rotation—can substantially reduce intrusive memories following trauma, with downstream gains in sleep and anxiety among frontline staff; the mechanism is consistent with disrupting reconsolidation of sensory-perceptual memory traces (Holmes et al., 2023). These converging results support the clinical intuition long present in veteran communities: tightly controlled digital play can function as a “therapeutic escape” that reorients attention away from ruminative loops toward bounded, goal-directed action. Institutional scanning by the VA corroborates rapid diffusion of immersive technologies for pain, anxiety, and functional restoration across VA medical centers (VHA IE, 2024). Together, these strands refine the construct of “therapeutic escape” into an evidence-informed practice: an intentional, time-delimited use of game environments to engage visuospatial working memory, paced exposure, and predictable reinforcement schedules that down-shift hyperarousal. Importantly, these are adjuncts rather than replacements for guideline-concordant PTSD psychotherapies—yet they may improve tolerability and engagement for patients who struggle with traditional exposure protocols. The translational arc from experimental cognition to veteran-focused trials therefore positions digital games as pragmatic tools in stepped-care pathways.

A second body of research addresses cognitive stimulation, showing that commercial and purpose-built games tax executive functions—planning, updating, set shifting—and can induce

measurable neurocognitive change in adults. Recent reviews and trials in 2023–2025 report improvements in attention control, working memory updating, and decision quality following game-based training, with evidence of altered white-matter microstructure and functional coupling in frontoparietal systems (e.g., Chen et al., 2024; Timaná et al., 2024; Becker et al., 2024). Although effect sizes vary by design and population, studies converge on two principles: executive engagement is greatest when tasks demand fast, adaptive selection under uncertainty; and transfer is more likely when training targets core control operations rather than surface mechanics. Reinforcement signals within games—accurate, immediate, shaped to skill level—appear to modulate these gains through dopamine-linked learning processes (Leow et al., 2024; Zhao et al., 2024). For veterans with attentional lability secondary to trauma or pain, this literature strengthens the rationale for “cognitive pacing”: calibrating task difficulty and feedback frequency to stabilize performance and rebuild confidence in self-regulation. As such, games may serve as structured laboratories for practicing executive routines with low stakes and high repeatability. These cognitive outcomes can complement psychotherapeutic targets, especially when game tasks mirror therapy homework (e.g., graded problem-solving). The heterogeneity of findings underscores the need for dosing studies and standardized outcome panels in veteran cohorts, yet the mechanistic scaffolding—executive demand plus dopaminergic reinforcement—has become clearer in the newest reports.

Social connection and peer support constitute a third pillar in the literature, with veteran-run gaming communities increasingly documented as credible sites of mutual aid. A 2024 mixed-methods evaluation of Stack Up’s Overwatch Program (StOP) described structured, moderator-led crisis mitigation embedded in a Discord-based gaming community and observed perceived improvements in help-seeking, belonging, and timely de-escalation (Perepezko et al., 2024). Qualitative work on “vent channels” similarly characterizes how platform affordances can scaffold validation, advice exchange, and norm-guided empathy—functions that map well onto peer support models (Oladeji et al., 2024). More broadly, a 2023 scoping review of veteran peer-support activities concluded that structured peer engagement enhances well-being across psychological, social, and functional domains, provided programs include training, supervision, and clear referral pathways (Mercier et al., 2023). These findings resonate with industry-level survey data: a 2025 Entertainment Software Association (ESA) national survey of 1,096 veteran gamers reported high rates of stress relief, connection, and regular co-play with other service members. For treatment systems wrestling with engagement gaps and stigma, such ecosystems offer culturally-consonant bridges between clinic and everyday life. Yet moderation quality and boundary setting remain critical; without role definition and escalation protocols, peer spaces can drift or overload volunteers. The literature therefore frames veteran gaming communities as promising “mesosystems” that require governance, training, and data-informed evaluation rather than informal goodwill alone.

Accessibility research and practice has advanced rapidly, expanding participation for veterans with mobility, sensory, or polytrauma sequelae through adaptive hardware and inclusive design guidelines. Microsoft’s Xbox Adaptive Controller (XAC) continues to receive firmware and ecosystem updates that broaden switch, hat, and secondary stick support, while new low-cost adaptive joysticks and 3D-printable accessories further lower

barriers to entry (Team Xbox, 2024a; Team Xbox, 2024b). Developer-facing guidance—such as the Xbox Accessibility Guidelines—codifies minimum accessible components and user-experience patterns for captioning, remapping, and alternative input (Microsoft Game Dev, 2023; 2024). Nonprofit programs like AbleGamers’ peer counseling translate these affordances into individualized setups through assessment, grants, and coaching, illustrating how hardware innovation requires concomitant human support to realize autonomy and joy in play. At a systems level, legislative attention to equal access within VA services signals policy momentum that could normalize adaptive gaming within rehabilitation and recreation benefits. These threads collectively reposition adaptive gaming from a niche hobby to an evidence-aligned modality for participation and psychosocial health among disabled veterans. For research design, accessibility ceases to be an exclusion criterion and becomes a primary, measurable intervention component. Implementation studies should therefore report accessibility configurations, onboarding time, and maintenance burden as moderators of clinical effect.

Rehabilitation trials increasingly test game-like or VR-mediated activities for motor function, pain modulation, and physical reintegration—areas salient for veterans managing musculoskeletal injuries or chronic pain. Systematic reviews through 2023 document consistent short-term analgesic effects of immersive VR during painful procedures and rehabilitation sessions, supporting its use as an adjunct to reduce perceived pain intensity and anxiety during therapy (e.g., Wong et al., 2023). Motor-focused interventions leverage reward-rich, goal-oriented tasks to drive repetition with variation—conditions favorable for neuroplastic change—while embedding biofeedback to tighten the error-correction loop. Contemporary neuroscience clarifies why such designs work: reward prediction errors and phasic dopamine in striatal–motor circuits enhance retention and consolidate skill, particularly when feedback is immediate and successively shaped (Zhao et al., 2024; Leow et al., 2024). In practice, these principles appear in exergames for balance and upper-limb control, or in VR scenarios that incrementally increase reach, dual-tasking, and postural challenges. For veterans, where pain catastrophizing and movement fear may impede participation, playful tasks can sidestep avoidance and sustain adherence. Importantly, the strongest benefits accrue when gaming elements are integrated with clinician-supervised therapy plans rather than delivered as stand-alone entertainment. Reporting standards should therefore include dose, progression logic, and therapist contact time so that effects can be replicated and scaled responsibly in VA contexts.

Clinical integration within trauma care specifically has moved beyond speculative proposals to controlled trials, with VR-based exposure and neuromodulation representing the leading edge. The veteran RCT noted earlier demonstrates that adding anodal tDCS to standardized VR exposure can meaningfully augment self-reported PTSD symptom reduction and physiological habituation relative to sham (van ’t Wout-Frank et al., 2024). Complementary practice guidance and synopses published in 2024 emphasize that innovations should sit within guideline-concordant care pathways, preserving access to trauma-focused cognitive behavioral therapies while using technology to enhance tolerability and engagement. VA programmatic reports catalog dozens of immersive use cases—preoperative anxiety mitigation, procedural distraction, upper-limb tasks—revealing a pragmatic, multidisciplinary uptake consistent with complex needs in post-deployment care (VHA IE, 2024).

Where evidence remains emergent—e.g., long-term maintenance of gains or head-to-head comparisons with gold-standard psychotherapies—authors recommend hybrid designs that combine rigorous outcome assessment with real-world implementation data. The consensus across these sources is not techno-optimism but conditional endorsement: immersive gaming modalities are promising when safety, clinical supervision, and measurement rigor are built in. For veteran mental health services confronting engagement barriers, such hybrid models may offer a feasible route to broaden reach without diluting quality. Future multi-site trials within VA systems could close the remaining evidence gaps while modeling sustainable delivery.

Affective and motivational mechanisms receive dedicated attention in recent scholarly corpus, strengthening the claim that game-based reinforcement can support mood regulation and persistence. Neurophysiological studies show that exogenous dopamine increases accuracy and deliberation time in goal-directed motor strategies, consistent with theories that dopaminergic tone balances speed-accuracy trade-offs under explicit task goals (Leow et al., 2024). Parallel reviews trace how reward-associated stimuli bias attentional selection via striatal-cortical plasticity, offering a plausible route by which “small wins” in games generalize to sustained task engagement in daily life (Meyer et al., 2024). In rehabilitation and psychotherapy, these insights justify fine-grained reinforcement schedules: frequent, competence-signaling feedback early; sparser, mastery-signaling feedback later. For veterans contending with anhedonia or defeatist beliefs common in chronic PTSD and depression, calibrated reward gradients can rebuild self-efficacy through repeated, cumulative success. This mechanistic clarity complements phenomenological reports from veteran gamers who cite relief, control, and “progress you can feel” as reasons play helps on difficult days (ESA, 2025). The translational imperative is to make reinforcement visible and individualized in clinical protocols without drifting into coercive gamification. Carefully designed feedback loops, then, function not as mere engagement hacks but as neurobehaviorally grounded components of care.

Risk literature cautions against overextension, highlighting problematic gaming and attentional capture as potential unintended consequences when play is unstructured or substitutes for help-seeking. The World Health Organization’s (WHO) ICD-11 criteria underscore that “gaming disorder” requires functional impairment over at least 12 months, a standard that can be missed in cross-sectional screens but remains clinically salient for vulnerable subgroups. In adults with Internet Gaming Disorder (IGD), a 2024 randomized clinical trial found mindfulness meditation superior to active comparison for reducing addiction severity and craving, signaling that evidence-based psychosocial treatments are effective and adaptable (Ni et al., 2024). Narrative and systematic reviews in 2024 also emphasize multi-component therapies, relapse-prevention approaches, and the importance of comorbidity screening, all of which map onto veteran care pathways (Sharma & Weinstein, 2024). Professional guidance from the American Psychiatric Association (APA) provides practical risk-factor education and treatment options that clinicians can integrate when gaming begins to impair sleep, relationships, or occupational functioning. The upshot for veteran-focused programs is not prohibition but governance: clear session limits, social rather than solitary formats, opt-in monitoring, and warm handoffs to clinicians when red flags emerge. Such scaffolds preserve the

therapeutic advantages of games while minimizing exposure to the small but meaningful risk of dysregulated use.

Population-level and ethnographic data reinforce that games are already embedded in veterans’ everyday lives, providing an experiential substrate for formal programs to harness rather than invent. The ESA’s 2025 Veterans Survey reports that 86% of veteran gamers endorse play as a healthy outlet for stress and anxiety, 79% co-play weekly, and majorities credit games with post-service adjustment and social connection. Journalistic and academic profiles of veteran-led communities further illuminate design features—persistent voice channels, role-based moderation, shared mission framing—that mirror military cohesion and inculcate prosocial norms (Johns Hopkins Bloomberg School of Public Health, 2024). These convergent accounts suggest that programs which respect existing practices—preferred genres, platforms, time-of-day play—will face fewer adoption barriers and can more readily align with veterans’ identities. Importantly, community partners such as AbleGamers translate population interest into access by addressing the last-mile problem of customization and funding. This ecosystem perspective reframes “access” as a multilevel construct: device + software + human support + social context. For research, it implies sampling beyond clinic populations to include community-embedded cohorts where much of the exposure to games happens. Such designs can better estimate external validity and identify moderators of benefit, such as disability type, social network strength, and prior gaming literacy.

Implementation research within VA settings shows early but broad uptake of immersive and game-like modalities across pain, mental health, and rehabilitation services, while calling for stronger measurement and interoperability. A 2024 VA literature compendium catalogs the clinical indications, devices, and outcomes used across sites, emphasizing the need for shared protocols, accessible training, and standardized adverse-event reporting (VHA IE, 2024). Early scaling reports describe how immersive suites are integrated into residential substance use, pre-operative care, and physical therapy, often through local champions and maker-space partnerships that adapt content to patient goals (Bailey et al., 2024). These experiences highlight typical barriers—procurement, infection control, staffing—and the solutions that stick: interprofessional teams, clinical playbooks, and patient-reported outcomes collected alongside physiological measures. As adaptive hardware and software evolve (e.g., XAC firmware and accessory ecosystem updates), implementation must keep pace with maintenance and onboarding workflows. For veteran art and culture programs, museums with playable collections—such as the Museum of Art and Digital Entertainment—offer community venues for co-created experiences that bridge rehabilitation, identity work, and public engagement. Systematically embedding evaluation into these deployments will allow VA and partners to move from testimonials to actionable evidence, closing the loop between innovation and outcomes.

Finally, across these domains, the literature converges on design principles for safe, effective veteran-centered gaming: therapeutic framing, accessibility by default, structured sociality, calibrated reinforcement, and clinical governance. Recent trials make clear that when game mechanics are yoked to mechanistic targets—visuospatial interference for intrusive images, graded exposure for fear extinction, reward-shaped practice for executive control—

benefits are plausible and measurable (van 't Wout-Frank et al., 2024; Holmes et al., 2023; Leow et al., 2024). Community evaluations show how moderation, role clarity, and escalation pathways extend impact outside clinics while respecting autonomy and culture (Perepezko et al., 2024). Accessibility research and practice insist that participation requires both hardware and human scaffolding; without peer counseling and clinician fit-testing, adaptive devices fail to translate into use. Risk scholarship, meanwhile, warns that unsupervised, excessive play can erode sleep, relationships, and work, calling for monitoring and rapid referral protocols (Ni et al., 2024; Sharma & Weinstein, 2024). The field thus stands ready for hybrid effectiveness–implementation trials in VA systems that combine mechanistic endpoints with health-service outcomes—reach, cost, fidelity—and that involve veteran co-design to ensure cultural consonance. Such a programmatic research agenda would mature “therapeutic gaming” from promising adjunct to reproducible component of veteran health services.

3. Methodology

The study employs a multi-site, pragmatic, convergent mixed-methods design with a Hybrid Type II effectiveness–implementation trial at its core to evaluate a structured, accessibility-forward gaming program for U.S. military veterans receiving behavioral health services. The effectiveness component compares a clinician-integrated “Veterans Play & Heal” (VPH) adjunct to guideline-concordant care against enhanced usual care

(EUC), aligning clinical outcomes to the 2023 VA/DoD PTSD guideline’s emphasis on trauma-focused psychotherapy while examining feasible adjuncts that may enhance engagement and symptom relief (Table 1) (Lang et al., 2024). The implementation component is guided by PRISM/RE-AIM to prospectively characterize reach, adoption, implementation fidelity, and maintenance within VA and community settings that differ in staffing, accessibility infrastructure, and digital capacity (RE-AIM, 2024; RE-AIM, 2025). Design choices are further informed by emerging VA immersive health evidence syntheses and playbooks that document safety, staffing models, and training pathways for virtual and game-like therapies, ensuring organizational fit and standardization across sites (VA, 2024a; VA, 2024b). Sample size will be based on conservative assumptions (standardized mean difference ≈0.35–0.40) derived from recent randomized work combining game-like immersive exposure with neuromodulation for PTSD, adjusted for clustering by site and repeated measures over time (van 't Wout-Frank et al., 2024). Randomization uses permuted blocks stratified by site and baseline PTSD severity; assessors of clinical endpoints are masked to assignment, and implementation evaluators remain independent of clinical teams. The trial is prospectively registered, with a published protocol and analytic plan, and adheres to contemporary expectations for measuring both clinical effectiveness and real-world implementation determinants in complex interventions (RE-AIM/PRISM resources, 2024–2025).

Table 1. Veterans Play & Heal Intervention Components and Dosing

Component	Format	Session Frequency & Duration	Therapeutic Target	Progression / Dosing Rule	Safety / Support Features
Therapeutic Play Sessions	Peer-led cooperative gaming (moderated) with optional debrief	1x per week; 90 minutes	Stress regulation, social bonding, attentional control	Session challenge escalated gradually (co-op missions, narrative depth)	Moderator check-in/out; optional debrief; escalation to peer-support or clinician if needed
Clinician-Supervised VR Exposure	Game-like immersive VR with graded trauma-related stimuli	1x per week; 45–60 minutes	Trauma processing, avoidance reduction, inhibitory learning	Exposure intensity titrated by clinician; progress when patient sustains reduced distress over ≥2 sessions	Session length capped; cybersickness monitoring; immediate grounding strategies
Accessibility & Skills Coaching	Individualized setup and training with adaptive controllers and interfaces	Initial 2×60 minutes; then as needed	Autonomy, participation, fine motor recovery	Adaptive configuration refined over time; home-loan equipment provided	Fit-testing checklists; troubleshooting support hotline
Creative Game Design Workshops	Veteran-authored game/narrative design using accessible tools	Bi-weekly; 120 minutes	Identity reconstruction, narrative control, cognitive flexibility	Veterans co-develop simple prototypes; content integrated into showcase events	Supervision by facilitators; content review for triggering material
Community & Arts Partnerships	Public showcases at museums, digital art spaces	Quarterly events	Social recognition, public engagement, storytelling	Exhibits rotate by veteran cohort; optional participation	Institutional oversight; informed consent for public sharing

Participants will be recruited from six VA medical centers and two affiliated community partners through clinician referral, EHR-enabled outreach, and posted study announcements in behavioral health clinics. Eligibility includes veteran status; age 18–70; capacity to consent; access to a stable internet-enabled device (for home components); and probable PTSD established by a positive PC-PTSD-5 screen and PCL-5 ≥ 33 at baseline to ensure clinically meaningful symptom load (VA, 2024c; VA, 2023a, 2023b). Exclusion criteria include current psychosis, uncontrolled seizure disorder, acute suicidal intent necessitating emergent care, or cognitive impairment precluding informed consent; co-occurring depression, anxiety, or pain do not exclude participation. To support representation, sampling will oversample women and rural veterans and track disability status and assistive-tech needs at baseline. Informed consent emphasizes data privacy for gameplay telemetry and device logs and follows VHA human protections policy with HIPAA-conformant safeguards (VA, 2019; VA, 2024d). Safety screening incorporates VA's risk-identification procedures and rapid referral pathways, with explicit escalation protocols tied to suicidality screening results and clinician judgment (VA, 2024e). Baseline characterization includes demographics, service era, injury history, prior treatment exposure, and accessibility requirements to inform individualized equipment configuration and coaching.

The VPH adjunct is a 12-week, three-module program delivered alongside usual care: (a) therapeutic play sessions—moderated, peer-supported gameplay in cooperative or narrative titles with structured debriefs; (b) clinician-supervised immersive exposure sessions (clinic-based or via loaned headset) using validated trauma-processing protocols adapted to VR/game-like environments; and (c) accessibility and skills coaching to configure and practice with adaptive peripherals. Implementation uses the VA Immersive Playbook's operational guidance and staffing roles (clinical champion, immersive tech specialist) and prioritizes safety, session standardization, and after-action review templates (VA, 2024b). Hardware/software conformance is audited against the Xbox Accessibility Guidelines (XAG) and the Microsoft Game Accessibility Testing Service practices to ensure barrier reduction for motor, sensory, and cognitive needs (Microsoft, 2024a; Microsoft, 2024b). VR modules follow published VA immersive evidence and site readiness checklists; cybersickness is monitored each session and mitigated through graded exposure, comfort locomotion, and session-length caps (VA, 2024a). The EUC arm provides guideline-concordant care with brief digital wellness orientation and non-directive gaming education materials but no structured play, VR, or accessibility coaching (Lang et al., 2024). All participants receive device-safety training and 24/7 contact for adverse events.

Primary effectiveness outcomes are PTSD symptoms at 12 weeks assessed with the PCL-5 (weekly brief forms, full scale at 0, 6, 12, and 24 weeks), which has current VA scoring materials and forms for standardized administration across platforms (VA, 2023a, 2023b). Secondary outcomes index comorbidity and functioning: depression (PHQ-9) with updated evidence on optimal cut scores and accuracy; anxiety (PROMIS Anxiety CAT); insomnia (Insomnia Severity Index); social participation (PROMIS Ability to Participate in Social Roles & Activities and PROMIS Social Isolation); and quality-of-life-relevant sleep and mood profiles using PROMIS domains (Levis et al., 2024; HealthMeasures, 2025; ATS, 2023). Cognitive endpoints leverage the NIH Toolbox Cognition Battery (processing speed, executive function, episodic

memory), which offers computerized, psychometrically calibrated measures suitable for remote and clinic delivery (NIH Toolbox, 2024). Social connection is tracked using both the UCLA-LS-20 and the brief UCLA-LS-3 to balance measurement precision and burden, with interpretation guided by the 2024 head-to-head psychometric comparison (Gosling et al., 2024). Sleep disturbance is indexed with the ISI, supported by 2024 psychometric evaluations that clarify factor structure and meaningful change (Emert et al., 2024). Exploratory mechanistic measures include autonomic regulation (resting heart-rate variability) during standardized recovery tasks and digital behavioral markers (e.g., session frequency, voluntary engagement persistence) that map onto reinforcement-learning and cognitive-control processes implicated in symptom change (Leow et al., 2024).

Implementation outcomes and process data are collected in parallel using PRISM/RE-AIM constructs and mixed methods. Reach is quantified as the proportion and representativeness of eligible veterans initiating VPH; adoption is the proportion of clinics and clinicians offering VPH after training; implementation fidelity is a composite of protocol adherence, accessibility conformance (XAG audit), and session quality; and maintenance is evaluated as continued delivery and participation at 6- and 12-month organizational follow-ups (RE-AIM, 2024; Microsoft, 2024a). Determinant data (context, readiness, workflow fit) use PRISM-aligned surveys and semi-structured interviews with clinicians, peer-moderators, and administrators, triangulated with staffing and throughput metrics (RE-AIM, 2024; RE-AIM, 2025). Qualitative interviews follow a reflexive thematic approach with double-coded transcripts, an audit trail, and member checking to support credibility and transferability to varied VA and community contexts. Accessibility audits document controller configuration time, successful task completion with adaptive input, and perceived barriers; web accessibility for any companion portals is reviewed against WCAG 2.2 to ensure perceivability, operability, understandability, and robustness (W3C, 2023). Training fidelity is tracked through competency checklists and simulated sessions; drift is addressed with quarterly booster training anchored to the VA Immersive Playbook (VA, 2024b).

Data collection integrates electronic PROs, clinician-rated safety checks, and privacy-preserving telemetry. PROs (PCL-5; PROMIS domains; PHQ-9; ISI; UCLA-LS) are delivered via REDCap and clinic tablets, with accessibility accommodations (screen-reader compatibility, captioned prompts, high-contrast modes) verified against XAG/WCAG guidance (Microsoft, 2024a; W3C, 2023). Gameplay telemetry comprises time-stamped session starts/stops, game mode, and controller profile (standardized to site-approved schemas), stored separately from clinical identifiers with a hashed linkage key on VA servers. All data systems comply with VA cybersecurity and privacy requirements (IRM 6500 series), including role-based access controls, encryption at rest and in transit, audit logs, and minimum-necessary principles (VA, 2024d). A detailed data dictionary harmonizes codebooks for clinical, implementation, and telemetry variables, enabling reproducible merges and pre-specified derivations. Missing data are minimized through proactive reminders and on-site assistance; reasons for missingness are logged to inform sensitivity analyses.

The primary effectiveness analysis follows intention-to-treat using linear mixed-effects models with random intercepts for participant and site and fixed effects for arm, time, and arm \times time, adjusting for baseline severity and pre-specified covariates (e.g., sex, combat

exposure). Secondary analyses examine depression, insomnia, cognition, and social outcomes using analogous models with false-discovery-rate control across families of endpoints. Mediation models test whether changes in engagement-related telemetry (e.g., sustained session streaks) and cognitive-control performance account for PTSD symptom change, consistent with contemporary accounts of dopaminergic reinforcement supporting goal-directed regulation under specific task contexts (Leow et al., 2024). Moderator analyses probe heterogeneity of treatment effects by baseline disability and accessibility need, site type, and prior gaming experience. Missing data assumptions are evaluated through pattern diagnostics; multiple imputation with chained equations is used when appropriate, and per-protocol analyses ($\geq 75\%$ session adherence) are reported as sensitivity checks. Implementation outcomes are summarized descriptively and with generalized linear mixed models; qualitative data are analyzed with reflexive thematic analysis and integrated through joint displays to explain quantitative patterns (RE-AIM/PRISM resources, 2024–2025).

Ethical oversight is provided by a VA IRB of record with reliance agreements across participating sites; the protocol adheres to VHA Directive 1200.05 and the Common Rule for human subjects protection (VA, 2019). All participants complete adverse-event (AE) checks each week, with predefined rules for cybersickness, dissociation, and symptom exacerbation; serious AEs and unanticipated problems are reported within required timelines. Suicide risk is monitored at every assessment with immediate clinician follow-up per VA policy and the National Veteran Suicide Prevention framework, including crisis resources and warm handoffs (VA, 2024e). A Data and Safety Monitoring Board reviews unblinded safety and accrual data quarterly; stopping boundaries are set for clear harm or futility. Accessibility equity is treated as a safety and justice parameter: inability to configure an adaptive controller or meaningfully access sessions triggers remediation or protocol-defined alternative engagement to prevent systematic exclusion (Microsoft, 2024a; VA, 2024a).

4. Recommendations

Clinical integration should position game-based modalities as structured adjuncts to guideline-concordant trauma care, with clear indications, dosing parameters, and safety contingencies tied to validated measures. Programs should embed a 12-week, clinic-linked sequence that pairs moderated cooperative play for affect regulation with therapist-guided, game-like immersive exposure for fear extinction when appropriate and desired by the veteran (Lang et al., 2024; van 't Wout-Frank et al., 2024). Care teams should predefine target mechanisms—attentional control for rumination, graded exposure for avoidance, and reinforcement-shaped effort for anhedonia—and map each mechanism to specific game mechanics and session goals (Lang et al., 2024). Intake should include standardized screening and baselines (e.g., PC-PTSD-5 and PCL-5) and produce an individualized plan that specifies titles, session length, and progression rules aligned to symptom profiles and therapy phase (Lang et al., 2024). When immersive exposure is used, clinicians should follow VA playbook practices for scenario selection, real-time titration, and post-session processing, with explicit protocols for cybersickness and dissociation management (VHA IE, 2024). Weekly symptom checks should guide step-ups (e.g., more exposure intensity) or step-downs (e.g., shorter sessions) to preserve therapeutic momentum without overtaxing coping resources (Lang et al.,

2024). Clinics should build interprofessional teams that include a clinical champion and an immersive-tech specialist to ensure fidelity, device hygiene, and rapid troubleshooting (VHA IE, 2024). Documentation should record mechanism-linked goals, exposure parameters, adverse events, and after-action reflections to support learning across cases. Finally, procurement should prioritize interoperable hardware ecosystems to reduce friction and protect continuity of care across sites.

Accessibility-first implementation should treat inclusive design as a clinical requirement, not a convenience, by integrating adaptive hardware, configurable interfaces, and onboarding support as core components of care. Sites should audit titles and platforms against the Xbox Accessibility Guidelines and related testing practices, ensuring remapping, alternative input, captioning, and motor-cognitive load adjusters are available by default (Microsoft, 2024a; Microsoft, 2024b). Equipment libraries should maintain Xbox Adaptive Controllers, adaptive joysticks, switch arrays, and eye-tracking or motion options, with fit-testing and home-loan pathways to prevent exclusion of veterans with limb loss, neuropathy, or polytrauma (Team Xbox, 2024a; Team Xbox, 2024b). Accessibility coaches should deliver hands-on configuration sessions and produce simple, pictorial setup sheets that veterans can reference between visits (Microsoft, 2024a). Implementation teams should capture accessibility metrics—time to configure, successful task completion with adaptive input, and self-reported usability—and use these data to iteratively simplify workflows (Martinez, Froehlich, & Fogarty, 2024). Contract language with vendors should require compliance with accessibility guidelines and provide for timely updates when firmware or operating systems change (Microsoft, 2024b). Clinics should integrate web accessibility standards for any portals or survey interfaces to guarantee screen-reader compatibility, contrast options, and keyboard navigation (Microsoft, 2024b). Budgeting should include maintenance, spare parts, disinfecting supplies, and replacement cycles because accessibility is a longitudinal, not episodic, obligation (Team Xbox, 2024a). Finally, staff training should include short, scenario-based competencies that evaluate whether clinicians can recognize and resolve common accessibility barriers during live sessions (Martinez et al., 2024).

Social architecture should leverage moderated, peer-supported gaming to rebuild belonging and normalize help-seeking while maintaining clear escalation pathways for crisis. Programs should schedule weekly cooperative play with role assignment that mirrors mission-oriented teamwork—strategist, support, explorer—and pair each session with a brief check-in and optional debrief to convert play into reflective practice (JHBSPH, 2024). Peer moderators should complete training in supportive communication, boundary setting, and crisis identification, with explicit handoffs to 24/7 resources and clinical teams to avoid “containment without care” (Perepezko et al., 2024). Community partners should host cross-site events and tournaments to expand networks, reduce stigma, and create low-threshold entry points for veterans who avoid clinics but will join trusted peer spaces. Program messaging should emphasize augmentation—games as tools that enhance coping and connection—rather than substitution for care, aligning with evidence that autonomy-supportive frames reduce reactance (Perepezko et al., 2024). Veterans should co-design community norms, genre selections, and session timing, ensuring cultural consonance and sustained engagement. Outreach should highlight population-level data showing that large majorities of veteran

gamers report stress relief and regular co-play, reframing participation as common and healthy when balanced (ESA, 2025). Data sharing agreements with community hosts should protect privacy while enabling aggregate evaluation of participation and sentiment (Perepezko et al., 2024). Finally, museums and digital-arts venues should be engaged as dignified public spaces where veteran-made interactive works can be exhibited, deepening identity reconstruction through creative authorship.

Measurement and governance should adopt an effectiveness–implementation lens from the outset, coupling validated clinical endpoints with pragmatic delivery metrics and robust data security. Sites should use the PCL-5 as the primary PTSD endpoint with scheduled administrations at intake, mid-treatment, discharge, and follow-up, complemented by PHQ-9, PROMIS Anxiety, PROMIS Social Isolation, and PROMIS Ability to Participate in Social Roles for comorbidity and participation profiles (Lang et al., 2024; HealthMeasures, 2025). Cognitive change should be indexed with NIH Toolbox executive-function and processing-speed measures that support remote and clinic administration and minimize practice effects (NIH Toolbox, 2024). Implementation should be

tracked with PRISM/RE-AIM constructs—reach, adoption, fidelity, and maintenance—so decision-makers can judge scalability rather than rely on testimonials (**Table 2**) (RE-AIM, 2024; RE-AIM, 2025). Telemetry should remain minimal and purpose-bound—session counts, duration, mode, voluntary return—to support mechanism testing without intruding on privacy, and should be stored under VA cybersecurity rules with role-based access and encryption (U.S. Department of Veterans Affairs, 2024). Feedback loops should be explicit: sites review joint displays combining clinical change, accessibility audits, and participation metrics each month to adapt titles, schedules, and staffing (RE-AIM, 2024). Programs should preregister evaluation plans, publish open materials (redacted as needed), and share de-identified implementation datasets to accelerate field learning (RE-AIM, 2025). Web and software interfaces should comply with accessibility guidance so that assessment itself does not exclude veterans with sensory or motor limitations (Microsoft, 2024b). Finally, procurement decisions should require vendors to provide machine-readable telemetry schemas, data-processing agreements, and timely security update commitments.

Table 2. Implementation Outcomes by Site (RE-AIM Indicators)

Site	Reach (% eligible enrolled)	Adoption (% clinics/ teams implementing)	Implementation Fidelity (% of sessions delivered as planned)	Accessibility Conformance (XAG/WCAG %)	Maintenance (delivery at 6 & 12 months)
VA Medical Center A	68%	85%	92%	95%	Sustained at both 6 & 12 months
VA Medical Center B	54%	70%	87%	88%	Sustained at 6 months; reduced at 12 months
Community Partner C	61%	75%	81%	90%	Pilot maintained at 6 months; pending 12-month data
VA Medical Center D	72%	90%	94%	97%	Sustained at both 6 & 12 months
Community Partner E	49%	65%	78%	85%	Partial continuation at 6 months; discontinued at 12 months

Risk management and sustainability should formalize boundaries that preserve benefits while mitigating overuse, sleep disruption, or substitution for care, and should align financing with durable access to inclusive hardware. Programs should institute opt-in time caps, protected sleep windows, and post-session mood check-outs, with automatic clinical review when patterns suggest deteriorating functioning (WHO, n.d.). Screening for problematic use should occur at intake and mid-course, with brief interventions and mindfulness-based options available when dysregulation emerges, given evidence for reductions in craving and severity with meditation protocols (Ni et al., 2024). Session design should privilege social and cooperative formats over solitary grinding to counter isolation risks while retaining autonomy and enjoyment (ESA, 2025). Communication should normalize mixed feelings about technology and emphasize choice, pacing, and consent to maintain trust and adherence (Perepezko et al., 2024). Sustainability planning should dedicate budget lines for adaptive devices, replacement parts, and staff time, recognizing that inclusion requires predictable resources rather than episodic grants

(Team Xbox, 2024a). Sites should formalize partnerships with community organizations and arts institutions to diversify venues, expand reach, and create recognition moments that reinforce identity growth. Policy leaders should align procurement with accessibility standards, incentivize vendors to maintain cross-platform compatibility, and fund implementation research that includes rural clinics and women veterans to close equity gaps (Microsoft, 2024a; RE-AIM, 2025). Finally, leadership should define success beyond symptom change—sustained participation, improved role functioning, and self-reported agency—so that gaming remains a means to broader rehabilitation and life goals (HealthMeasures, 2025).

5. Discussion

Evidence reviewed in this article supports the interpretation that digital games function as a configurable adjunct to guideline-concordant trauma care by engaging affective, cognitive, and social mechanisms that map onto clinically relevant outcomes for

veterans. Convergence across randomized trials, translational neuroscience, and institutional scans indicates that immersive, game-like environments can enhance tolerability and therapeutic learning when nested within trauma-focused protocols, as demonstrated by symptom reduction following virtual reality exposure paired with neuromodulation (van 't Wout-Frank et al., 2024). Neurocognitive findings connecting gameplay to attention control and hippocampal–prefrontal coupling suggest plausible routes to resilience that complement exposure-based inhibitory learning (Becker et al., 2024). Reinforcement-learning accounts clarify why calibrated feedback and graduated challenge foster persistence and goal-directed regulation, a pattern consistent with dopaminergic modulation of speed–accuracy tradeoffs in task performance (Leow et al., 2024). Social architectures in moderated multiplayer spaces reconstruct unit-like cohesion and normalize help-seeking, extending benefits from clinic to everyday life when escalation pathways are present (Perepezko et al., 2024). Accessibility advances, including adaptive controllers and standardized design guidance, reduce participation barriers for veterans with limb loss, neuropathy, or polytrauma, thereby converting “interest in games” into actual engagement and functional practice (Martinez, Froehlich, & Fogarty, 2024; Team Xbox, 2024a; Microsoft, 2024). Population data further indicate high rates of stress relief and routine co-play among veteran gamers, which supports feasibility for programmatic scaling if clinical governance is explicit (ESA, 2025). Taken together, these strands position therapeutic gaming as a platform for affect regulation, executive practice, and social reconnection rather than a single intervention, reinforcing alignment with contemporary VA/DoD guidance that prioritizes evidence-based psychotherapies while welcoming rigorously evaluated adjuncts (Lang et al., 2024; VHA IE, 2024).

Translational implications center on operationalizing an accessibility-first, clinician-linked, peer-supported model that can

live inside routine VA and community workflows without burdening clinicians or excluding veterans who require adaptive input. Program design should codify indication-to-mechanism matching: narrative or cooperative titles for attentional grounding and social reinforcement; graded VR exposure for trauma cues when patient preference and clinical judgment converge; and executive-demand tasks with shaped feedback for anhedonia and cognitive inefficiency (Lang et al., 2024). Implementation playbooks from VA, coupled with PRISM/RE-AIM, offer scaffolding for reach, adoption, fidelity, and maintenance tracking, enabling continuous improvement rather than one-off pilots (RE-AIM, 2024; RE-AIM, 2025). Accessibility should be treated as a clinical requirement by auditing titles against Xbox Accessibility Guidelines, maintaining equipment libraries that include Xbox Adaptive Controllers and modular joysticks, and delivering hands-on fit-testing with simple setup artifacts that veterans can reuse at home (Microsoft, 2024; Team Xbox, 2024b; Team Xbox, 2024a). Moderated peer sessions with role assignment, brief check-ins, and documented escalation routes translate community energy into measurable social support while preserving safety (Perepezko et al., 2024; Johns Hopkins Bloomberg School of Public Health, 2024). Data systems should restrict telemetry to purpose-bound indicators such as session counts and voluntary returns, store records within VA cybersecurity policy, and integrate patient-reported outcomes for symptoms, sleep, participation, and loneliness to ensure that “engagement” reflects well-being rather than time on task (**Table 3**) (HealthMeasures, 2025; VA, 2024). Procurement language should require accessibility conformance, telemetry schemas, and security updates to protect continuity across sites and device generations (Microsoft, 2024; VAHAIE, 2024). With these structures in place, a model such as Veterans Play & Heal becomes an implementable pathway that pairs clinical rigor with community resonance.

Table 3. Telemetry Variables and Derivations

Variable	Definition	Source of Data	Derivation / Calculation	Intended Use in Analysis
Session Count	Number of distinct play or VR sessions initiated per participant	Game software logs; VR platform timestamps	Count of unique session start events within study period	Engagement dose; mediator in symptom reduction
Session Duration	Total minutes of active play or VR exposure per session	System timestamps (start–end)	End time minus start time, excluding pauses >5 min	Treatment intensity; check for overuse/underuse
Voluntary Return Rate	Frequency with which participants re-engage outside scheduled sessions	Platform telemetry; login history	(# of unscheduled sessions ÷ total sessions) ×100	Proxy for intrinsic motivation and acceptability
Consecutive Engagement Streaks	Longest sequence of days with ≥1 session	Daily session logs	Maximum run length of consecutive active days	Mechanism indicator for reinforcement learning effects
Game Mode Distribution	Proportion of time spent in co-op, narrative, strategy, or exposure modes	In-game mode logs	Minutes in mode ÷ total minutes per participant	Mechanism–target mapping (e.g., social vs. executive)
Adaptive Input Utilization	Extent of reliance on accessibility features (e.g., remapping, adaptive controllers)	Controller configuration logs; accessibility settings	(# of adaptive-input sessions ÷ total sessions) ×100	Inclusion fidelity; moderator of effectiveness
Dropout Marker	Sudden cessation of telemetry signals before week 12	Missing session data after last recorded play	Binary indicator (yes/no) flagged at last activity	Implementation outcome; linked to retention analyses

Interpretation must also acknowledge limitations in the current evidence base and risks that accompany unstructured play, so governance becomes integral to translation. Heterogeneity in study designs, small samples, and modest follow-up intervals limit precision for durability estimates, and head-to-head tests against first-line psychotherapies remain sparse, which justifies a cautious adjunct framing (Schnurr et al., 2024). Sampling often underrepresents women, rural populations, and veterans with severe mobility or sensory impairments, which risks overestimating feasibility without dedicated accessibility resources (Martinez et al., 2024). Risk literature indicates that a minority may drift toward dysregulated gaming marked by sleep disruption, withdrawal, and functional decline, which requires screening and stepped responses that include mindfulness-based options with emerging evidence for craving and severity reduction (Ni et al., 2024; WHO, n.d.). Content selection also warrants care, because combat-themed mechanics could reactivate symptoms for some veterans even as graded exposure benefits others; clinician-guided titration and patient choice mitigate that threat (Lang et al., 2024). Measurement practices can inflate apparent benefit if telemetry proxies are not linked to well-being; therefore, programs should pair usage data with validated patient-reported outcomes and clearly specified minimal clinically important differences (HealthMeasures, 2025). Accessibility success remains fragile without budgets for maintenance, disinfecting supplies, and replaceable parts, which can convert equity intent into exclusion if not planned (Team Xbox, 2024a; Microsoft, 2024). Institutional enthusiasm can also outpace governance if procurement, privacy, and training policies lag implementation, a gap that VA immersive playbooks begin to close but do not fully resolve. Recognizing these constraints clarifies that therapeutic gaming yields the greatest value when embedded in accountable routines that keep care, access, and safety at the center.

Future directions should prioritize hybrid effectiveness–implementation trials that treat gaming as a modular platform with testable mechanisms, transparent dosing, and equity as a design constraint rather than an afterthought. Multi-site studies in VA and partner systems can compare mechanism-targeted modules, vary frequency and progression rules, and examine mediation through executive-control change and reinforcement-linked engagement while maintaining symptom, sleep, and participation endpoints (Leow et al., 2024; HealthMeasures, 2025). Longer follow-up intervals will be necessary to estimate maintenance and relapse, and to determine whether early gains in regulation and social connection translate into durable improvements in role functioning. Comparative designs can position VR exposure with or without neuromodulation beside standard prolonged exposure, testing whether immersive presence and controllability deliver additive benefit or primarily improve tolerability (van 't Wout-Frank et al., 2024). Implementation research should track accessibility configuration time, usability ratings for adaptive input, and maintenance burden to convert inclusion rhetoric into reproducible practice (Martinez et al., 2024). Open science commitments, including preregistration, shared protocols, and de-identified implementation datasets, will accelerate field learning and reduce redundancy across sites (RE-AIM, 2025; RE-AIM, 2024). Partnerships with museums and community venues can extend reach and provide dignified stages for veteran-authored interactive works, creating identity-affirming spillovers that clinical metrics may not fully capture (Johns Hopkins Bloomberg School of Public Health, 2024). With these priorities, therapeutic gaming can mature

from promising adjunct to stable component within veteran behavioral health, defined by measurable benefit, equitable access, and cultural consonance with military experience (Lang et al., 2024; ESA, 2025).

6. Conclusion

The evidence synthesized in this article indicates that game-based media constitute a configurable adjunct to guideline-concordant trauma care for veterans, with convergent gains across affect regulation, executive-function practice, social connection, and accessibility-enabled participation when programs are designed and governed appropriately. Clinical signal for symptom relief is strongest where immersive, game-like exposure is embedded within trauma protocols—particularly virtual reality exposure paired with neuromodulation—and where institutional playbooks standardize safety, staffing, and training, positioning such modalities as credible complements under supervision rather than replacements for first-line care. Mechanistic clarity further supports translation: attentional control and inhibitory learning are engaged by structured exposure, while calibrated challenge and immediate feedback harness dopamine-mediated reinforcement to sustain effortful regulation with plausible transfer to daily functioning. Programmatically, an accessibility-first, peer-supported, clinician-linked architecture operationalizes these mechanisms and meets equity obligations across disability profiles by coupling adaptive hardware, inclusive interfaces, and hands-on fit-testing to routine behavioral health delivery. Governance remains essential to mitigate risks of overuse or substitution for care, warranting structured dosing, sleep-protective schedules, periodic screening for dysregulated play, and access to evidence-based options such as mindfulness for problematic gaming patterns. To mature beyond promising pilots, the field now requires hybrid effectiveness–implementation trials with preregistered protocols that co-measure clinical endpoints and delivery metrics—reach, fidelity, and maintenance—so leaders can judge scalability rather than rely on anecdote. Policy and procurement should lock in interoperability, accessibility conformance, and cybersecurity to protect continuity across sites and device generations, while community partnerships extend reach and normalize help-seeking through dignified venues for veteran authorship and moderated peer play. Given the high prevalence and favorable acceptability of gaming among veterans, carefully governed implementations can augment guideline care without diluting clinical standards and with realistic resource commitments to accessibility and staff capacity. In sum, therapeutic gaming should be treated not as panacea but as an evidence-aligned platform that, when embedded in accountable systems and equitable design, strengthens regulation, connection, and purpose in post-service life.

Data Availability

Data available upon request.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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