

HAPAX: A Multidimensional Assessment Protocol for Behavioral and Lifestyle Intervention in Independent Practice

Lorenzi R. Marcos

Independent Researcher, Minimal Control Lab

Health Wise Trainer LLC, Okeechobee, Florida, United States

ORCID: 0009-0008-9431-6968

Correspondence: healthwisetrainerllc@gmail.com

Preprint deposited: June 2026

This is a non-peer-reviewed preprint. The content has not been certified by peer review.

ABSTRACT

Background: Comprehensive health assessment in independent practice has historically been constrained by the use of fragmented, single-domain instruments that fail to capture the multidimensional nature of human behavior and biological function. No standardized, bilingual, integrated instrument has been developed for use by independent behavioral health practitioners working across chemical dependency, behavioral compulsion, and digital dependency domains.

Objective: This paper presents HAPAX (Holistic Assessment Protocol for Adaptive eXistence), a 12-block multidimensional assessment protocol developed for application in individual behavioral health consultations. HAPAX integrates seven internationally validated screening instruments with five additional clinical domains, creating a comprehensive baseline assessment tool applicable across chemical, behavioral, and digital dependency presentations.

Methods: HAPAX was developed through systematic integration of validated instruments — PAR-Q+, PHQ-9, GAD-7, AUDIT, CAGE, the Transtheoretical Model of Change (TTM, Prochaska & DiClemente), and the NCI Dietary Screener Questionnaire — with five practitioner-

developed domains addressing sleep and recovery, physical and social environment, behavioral and digital compulsion patterns, spirituality and purpose, and movement history. The instrument is available in Portuguese and English.

Results: The instrument provides a structured 12-domain baseline assessment enabling individualized intervention planning across biological, environmental, and behavioral dimensions. Application in independent practice demonstrates feasibility for use without institutional infrastructure.

Conclusions: HAPAX addresses a gap in behavioral health assessment for independent practitioners. The integration of validated screening instruments with practitioner-developed domains offers a replicable, low-cost assessment protocol suitable for use in remote and in-person individual consultations.

Keywords: assessment protocol, behavioral health, multidimensional screening, addiction, digital dependency, independent practice, BEBTH framework, bilingual assessment

INTRODUCTION

Health assessment in clinical and wellness settings has traditionally relied on single-domain instruments designed for use within institutional frameworks. While tools such as the Patient Health Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002) and the Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006) have demonstrated robust validity across populations, their individual application fails to capture the complex, interacting nature of human behavioral dysfunction.

Independent practitioners operating outside institutional settings face a particular challenge: the absence of an integrated, low-cost, clinically grounded assessment tool that spans multiple domains of health simultaneously. This absence frequently leads to fragmented intake processes that miss critical co-occurring conditions — a practitioner assessing movement history

may overlook alcohol use patterns; one focused on nutritional behavior may fail to screen for anxiety or digital dependency.

A second challenge concerns the theoretical framework underlying assessment. Dominant models of behavioral change — including the Transtheoretical Model (Prochaska & DiClemente, 1983), the COM-B System (Michie et al., 2011), and PRIME Theory (West, 2006) — address behavioral change processes but do not integrate biological homeostasis as a primary variable. The practitioner is thus left without a coherent model linking biological status, environmental conditions, behavioral patterns, and time to functional outcomes.

The present paper addresses both challenges. First, it describes HAPAX, a 12-block integrated assessment instrument developed for independent practice. Second, it situates HAPAX within the BEBTH Framework — Biology, Environment, Behavior, Time, Homeostasis — a theoretical model proposed by the author as an integrative lens for understanding behavioral change across chemical, behavioral, and digital dependency presentations.

HAPAX was developed from sustained practitioner observation across multiple national contexts, professional domains, and dependency typologies. The instrument is practice-derived and is designed for application in independent consultation settings outside institutional clinical infrastructure.

THEORETICAL FRAMEWORK: THE BEBTH MODEL

HAPAX is grounded in the BEBTH Framework, a five-variable integrative model proposed by this author for understanding behavioral dysfunction and capacity for change:

Biology → Environment → Behavior → Time → Homeostasis

Biology refers to the physiological status of the individual, including sleep quality, nutritional state, movement patterns, substance use history, and neurological baseline. Environment encompasses physical surroundings, social networks, occupational conditions, and

digital ecosystem. Behavior describes observable and self-reported patterns, including compulsive and habitual actions across chemical, behavioral, and digital domains. Time represents both the chronological duration of patterns and the individual's current stage of readiness for change. Homeostasis is positioned not as an endpoint but as a dynamic target state — the organism's ongoing adaptive equilibrium.

This model differs from existing frameworks in its explicit positioning of homeostasis as an active variable, not a background assumption. The organism is understood as continuously adapting; the role of assessment is to identify where and how that adaptation has become maladaptive, and to locate the minimal effective intervention point.

The concept of minimal effective intervention is central to HAPAX's design rationale. HAPAX seeks to identify not the most comprehensive possible intervention, but the most precisely targeted one compatible with the client's current biological and environmental reality.

INSTRUMENT DESCRIPTION: HAPAX 12-BLOCK STRUCTURE

HAPAX is organized into twelve sequential assessment blocks. Blocks 1 through 7 incorporate validated instruments with established psychometric properties. Blocks 8 through 12 represent practitioner-developed domains addressing areas not covered by existing validated tools.

Block 1 — Physical Activity Readiness

Instrument: Physical Activity Readiness Questionnaire Plus (PAR-Q+; Warburton et al., 2011). Domain: Cardiovascular and musculoskeletal safety for exercise participation. The PAR-Q+ is a seven-question screening tool with follow-up modules. It establishes baseline physical safety for exercise prescription and identifies contraindications requiring medical clearance.

Block 2 — Depression Screening

Instrument: Patient Health Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002). Domain: Depressive symptom severity over the prior two weeks. The PHQ-9 is a nine-item self-report

instrument with established sensitivity (88%) and specificity (88%) for major depression. Scoring ranges from 0–27, with clinical thresholds at 5 (mild), 10 (moderate), 15 (moderately severe), and 20 (severe).

Block 3 — Anxiety Screening

Instrument: Generalized Anxiety Disorder-7 (GAD-7; Spitzer et al., 2006). Domain: Anxiety symptom severity. The GAD-7 is a seven-item instrument demonstrating strong reliability (Cronbach's alpha = .92) and criterion validity against structured psychiatric interview.

Block 4 — Alcohol Use Assessment

Instrument: Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993). Domain: Hazardous and harmful alcohol consumption patterns. The AUDIT is a ten-item instrument developed by the World Health Organization (WHO), validated across multiple cultural and linguistic contexts.

Block 5 — Chemical Dependency Screening

Instrument: CAGE Questionnaire (Ewing, 1984). Domain: Alcohol and substance dependency indicators. The CAGE (Cut, Annoyed, Guilty, Eye-opener) is a four-item rapid screening tool with sensitivity of 71–96% for alcohol dependency. Applied here in an adapted form to encompass chemical dependency broadly.

Block 6 — Stage of Change Assessment

Instrument: Transtheoretical Model of Change Stage Classification (TTM; Prochaska & DiClemente, 1983). Domain: Motivational readiness for behavioral change. The TTM identifies client position across five stages: Precontemplation, Contemplation, Preparation, Action, and Maintenance. Stage identification informs intervention intensity and timing.

Block 7 — Dietary Pattern Screening

Instrument: NCI Dietary Screener Questionnaire (DSQ; National Cancer Institute, 2016).

Domain: Frequency of consumption of major food categories. The NCI DSQ is a validated brief dietary assessment tool estimating intake of fruits, vegetables, added sugars, whole grains, fiber, calcium, and processed meats.

Block 8 — Sleep, Energy, and Recovery

Practitioner-developed domain. This block assesses sleep duration, sleep quality, sleep schedule regularity, perceived energy levels, and recovery patterns following physical or cognitive exertion. Sleep is positioned as a primary biological variable given its direct relationship to hormonal regulation, neurological function, emotional regulation, and addictive behavior reinforcement (Walker, 2017).

Block 9 — Physical and Social Environment

Practitioner-developed domain. Environmental factors are assessed across physical (housing stability, neighborhood characteristics, occupational environment), social (relationship quality, social network composition, isolation indicators), and economic (financial stressors, food security, transportation access) dimensions.

Block 10 — Behavioral and Digital Dependency Patterns

Practitioner-developed domain. This block assesses compulsive behavioral patterns — including eating, gambling, sexual behavior, work, and exercise — and digital dependency indicators including screen time, platform dependency, notification-driven behavior cycles, and passive versus active digital engagement. Digital dependency is assessed as a parallel axis to chemical dependency, sharing common neurobiological reinforcement mechanisms (Alter, 2017; Lorenzi, 2026).

Block 11 — Spirituality, Meaning, and Purpose

Practitioner-developed domain. This block assesses the client's relationship to meaning-making systems, existential orientation, religious or spiritual practice, and sense of purpose.

Inclusion reflects evidence that meaning and purpose are independently associated with health outcomes and recovery trajectories (Frankl, 1959; Kim et al., 2019).

Block 12 — Movement History and Body Relationship

Practitioner-developed domain. This block documents the client's history of physical activity, sport participation, relationship with physical pain, body image, and patterns of movement avoidance or compulsion. The practitioner-client relationship to movement is assessed as foundational context for any exercise or physical activity prescription.

ADMINISTRATION AND APPLICATION

HAPAX is administered prior to the first consultation session. Clients receive the full 12-block instrument in their preferred language (currently available in Portuguese and English) via digital delivery. Estimated completion time is 25 to 45 minutes depending on the client's literacy level and self-reflection capacity.

The completed HAPAX generates a practitioner review document that identifies: (1) domains requiring immediate clinical referral (e.g., PHQ-9 scores indicating severe depression, AUDIT scores indicating alcohol dependency); (2) domains of primary intervention focus; (3) the client's stage of change, which informs intervention pacing; and (4) environmental and biological factors constraining behavioral change capacity.

HAPAX is not a diagnostic instrument. It is an assessment and intake protocol. Results are interpreted by the practitioner in consultation with the client and do not constitute clinical diagnosis. Clients scoring above established clinical thresholds on validated instruments (PHQ-9 $\geq$ 15, AUDIT $\geq$ 16, GAD-7 $\geq$ 15) are referred to appropriate licensed professionals.

The instrument is explicitly bilingual in design, with both Portuguese and English versions developed in parallel by the author. This reflects the primary client population: Brazilian-born individuals residing in the United States and other non-Portuguese-speaking countries, for whom cultural and linguistic alignment in health assessment represents a significant access barrier.

ETHICAL CONSIDERATIONS AND SCOPE BOUNDARIES

HAPAX is designed with explicit scope boundaries consistent with the author's professional certifications and ethical obligations under the American Council on Exercise (ACE) Code of Ethics and the United States Registry of Exercise Professionals (USREPS) standards.

The instrument does not constitute medical assessment, psychiatric evaluation, or licensed clinical screening. Practitioners using HAPAX should operate within their scope of practice and hold appropriate credentials for the domains they assess. The validated instruments incorporated in HAPAX (PHQ-9, GAD-7, AUDIT, CAGE) are publicly available and have been used in non-clinical practitioner settings with appropriate referral protocols.

Practitioners administering HAPAX should comply with applicable privacy, confidentiality, and data protection regulations within their jurisdiction. Data handling protocols are the responsibility of the administering practitioner.

No promises of clinical outcomes are made by the instrument or by its author. HAPAX provides structure for assessment; outcomes depend on individual client adherence, biological variability, and the quality of intervention planning.

DISCUSSION

The development of HAPAX responds to a practical gap in behavioral health practice: the absence of an integrated, practitioner-usable, multi-domain assessment tool that does not require institutional infrastructure or licensed clinical credentials to administer.

The three-axis framework underlying HAPAX — chemical dependency, behavioral dependency, and digital dependency — reflects a convergent understanding of reinforcement-based behavioral dysfunction. While these three domains are frequently studied in isolation, clinical observation suggests they share common mechanisms of repetition, adaptation,

reinforcement, and progressive erosion of autonomy (Volkow et al., 2016). HAPAX treats these axes as potentially co-occurring rather than mutually exclusive.

The inclusion of digital dependency as a primary assessment domain is a deliberate theoretical and practical position. Sustained practitioner observation across multiple national and cultural contexts indicates that digital platform engagement has increasingly assumed the structural characteristics of chemical dependency: tolerance development, withdrawal symptoms, craving cycles, and interference with competing reinforcers. This position is supported by emerging literature (Andreassen et al., 2016; Brand et al., 2019) and is consistent with the conceptual argument articulated in the author's registered statement: 'The first industrialized product was food. The second was attention. The third may be identity' (Lorenzi R. Marcos, N0628MRLTM, 2026).

The BEBTH Framework positions homeostasis as an active target variable rather than a default state. This reframing has practical implications for intervention design: if the organism is understood as continuously adapting rather than passively stable, the practitioner's role shifts from correction to calibration. HAPAX is designed to support this calibration approach by mapping the full range of variables influencing biological and behavioral equilibrium.

Limitations of the current presentation include the absence of formal psychometric validation data for the practitioner-developed blocks (8–12), the limited sample base from which the instrument has been refined, and the single-author development process. Future work should include structured pilot testing, inter-rater reliability assessment for practitioner interpretation, and formal translation validation for the Portuguese instrument version.

CONCLUSION

HAPAX is presented as an integrated assessment protocol developed for independent behavioral health practice. Its 12-block structure, combining seven validated screening instruments with five practitioner-developed domains, provides a comprehensive baseline assessment protocol applicable across chemical, behavioral, and digital dependency presentations.

The instrument's bilingual design, explicit scope boundaries, and referral protocols are intended to support appropriate use by independent practitioners working outside institutional clinical settings. Its grounding in the BEBTH Framework provides theoretical coherence linking biological, environmental, and behavioral variables to homeostatic outcomes.

This preprint is made available to establish priority of development and to invite critical review from the research and practitioner communities. The author welcomes correspondence.

REFERENCES

1. Alter, A. (2017). *Irresistible: The rise of addictive technology and the business of keeping us hooked*. Penguin Press.
2. Andreassen, C. S., Pallesen, S., & Griffiths, M. D. (2016). The relationship between addictive use of social media, narcissism, and self-esteem: Findings from a large national survey. *Addictive Behaviors*, 64, 287–293.
3. Brand, M., Wegmann, E., Stark, R., Müller, A., Wölfling, K., Robbins, T. W., & Potenza, M. N. (2019). The Interaction of Person-Affect-Cognition-Execution (I-PACE) model for addictive behaviors: Update, generalization to addictive behaviors beyond internet-use disorders, and specification of the process character of addictive behaviors. *Neuroscience & Biobehavioral Reviews*, 104, 1–10.
4. Ewing, J. A. (1984). Detecting alcoholism: The CAGE questionnaire. *JAMA*, 252(14), 1905–1907.
5. Frankl, V. E. (1959). *Man's search for meaning*. Beacon Press.
6. Kim, E. S., Strecher, V. J., & Ryff, C. D. (2019). Purpose in life and use of preventive health care services. *Proceedings of the National Academy of Sciences*, 111(46), 16331–16336.
7. Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals*, 32(9), 509–515.

8. Lorenzi R. Marcos (2026). The first industrialized product was food. The second was attention. The third may be identity [Registered statement]. N0628MRLTM. Minimal Control Lab.
9. Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, 6, 42.
10. National Cancer Institute. (2016). Dietary Screener Questionnaire in the NHANES 2009–10. Applied Research Program, National Cancer Institute.
11. Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology*, 51(3), 390–395.
12. Saunders, J. B., Aasland, O. G., Babor, T. F., de la Fuente, J. R., & Grant, M. (1993). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption—II. *Addiction*, 88(6), 791–804.
13. Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder. *Archives of Internal Medicine*, 166(10), 1092–1097.
14. Volkow, N. D., Koob, G. F., & McLellan, A. T. (2016). Neurobiologic advances from the brain disease model of addiction. *New England Journal of Medicine*, 374(4), 363–371.
15. Walker, M. (2017). *Why we sleep: Unlocking the power of sleep and dreams*. Scribner.
16. Warburton, D. E. R., Jamnik, V., Bredin, S. S. D., & Gledhill, N. (2011). The Physical Activity Readiness Questionnaire for Everyone (PAR-Q+) and Electronic Physical Activity Readiness Medical Examination (ePARmed-X+). *Health & Fitness Journal of Canada*, 4(2), 3–23.
17. West, R. (2006). *Theory of addiction*. Blackwell.

AUTHOR NOTE

Lorenzi R. Marcos is an independent researcher and behavioral health consultant. He holds certifications from the American Council on Exercise as Personal Trainer, Fitness Nutrition Specialist, Corrective Exercise Specialist, and Behavior Change Specialist. He holds an Applied Neuroscience certification from Holistic.com (internationally accredited) and completed Introduction to Psychology at the University of Toronto. He is a registered member of the United States Registry of Exercise Professionals (USREPS) and a member of the Academia Internacional de Literatura Brasileira (AILB, n.º 1199), where he is registered as the author of nine books on health, behavior, and biological self-knowledge.

The author has professional experience across multiple countries and conducts assessments in Portuguese, Italian, English, and Spanish. He declares no institutional affiliation, no funding sources, and no conflicts of interest in relation to this work.

Health Wise Trainer LLC operates as the legal entity under which Minimal Control Lab conducts its activities (DBA). The BEBTH Framework and HAPAX instrument are author-developed frameworks introduced in this paper and in related works by Lorenzi R. Marcos.

ORCID: <https://orcid.org/0009-0008-9431-6968>

Contact: healthwisetrainerllc@gmail.com

© 2026 Lorenzi R. Marcos. This preprint is shared under CC BY 4.0 International License.