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The Mirage of Perfect Exercise Adherence: Lessons Learned About Problematic Exercise

El Espejismo de la Adherencia al Ejercicio Perfecta: Lecciones Aprendidas Sobre el Ejercicio Problemático

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Abstract:

Over the past two decades, the research that we (together with a large group of collaborators) have conducted on exercise adherence and behavioral dynamics has revealed a profound paradox that challenges the idealized notion of perfect adherence to physical exercise. The primary aim of this article is to outline key lessons learned about problematic exercise. This term, used in the absence of consensus, refers to a pattern of activity that leads to impairment or dysfunction for the individual. One of the central lessons emerging from this work is that the core of the problem lies in the loss of control and the quality of motivation, with problematic exercise functioning as a means of escape or refuge from basic psychological deficiencies and broader life difficulties. Additionally, we have observed that problematic exercise is not merely an individual pathology but also a manifestation shaped by a sociocultural regime that glorifies performativity. This cultural context complicates diagnosis, as excessive exercise is often celebrated as discipline, masking underlying compulsive patterns. Such rigidity is also evident in secondary exercise, where activity becomes instrumentalized to achieve external goals tied to the tyranny of body image (e.g., weight control or dysmorphia), rather than intrinsic health motives. Finally, lessons regarding diagnosis and treatment highlight the limitations of self-report instruments; clinical interviews are required to assess actual harm and the subjective meaning of the behavior. Consequently, treatment should focus on restoring control and addressing deficits in basic psychological needs, allowing movement to be reintegrated harmoniously into the individual's life.

Keywords:

Behavioral addiction; exercise addiction; compulsive exercise; exercise dependence; obligatory exercise; excessive exercise.

Resumen:

La investigación que, junto con un amplio grupo de investigadores, hemos desarrollado durante las últimas dos décadas sobre la adherencia y las dinámicas del ejercicio físico ha revelado una profunda paradoja que echa por tierra la idealización de una adherencia perfecta hacia el ejercicio físico. El objetivo principal de este artículo es describir algunas lecciones aprendidas sobre el ejercicio problemático. Este término es un término genérico adoptado ante la falta de consenso, que describe el ejercicio como una actividad que genera un deterioro o disfunción para el individuo. Una de las lecciones aprendidas fundamentales es que la esencia del problema reside en la pérdida de control y la calidad de la motivación, operando el ejercicio problemático como un mecanismo de evasión o refugio ante carencias psicológicas básicas y problemas vitales generales. Adicionalmente, hemos constatado que el ejercicio problemático no es solo una patología individual, sino una manifestación moldeada por un régimen sociocultural que exalta la performatividad. Esta cultura complica el diagnóstico, ya que el ejercicio excesivo es a menudo celebrado como disciplina, enmascarando la compulsión patológica. Esta rigidez también se observa en el ejercicio secundario, donde la actividad se instrumentaliza para lograr metas externas como la relacionada con la tiranía de la imagen corporal (e.g., el control de peso o la dismorfia), más que por motivos de salud intrínseca. Finalmente, las lecciones sobre el diagnóstico y el tratamiento resaltan la insuficiencia de los instrumentos de autoinforme; se requiere una entrevista clínica para evaluar el daño real y el significado subjetivo del comportamiento. Por lo tanto, el tratamiento debe enfocarse en restaurar el control y abordar las carencias subyacentes en las necesidades psicológicas, permitiendo que el movimiento se integre de manera armoniosa en la vida del individuo.

Palabras claves:

Adicción conductual, adicción al ejercicio, ejercicio compulsivo, dependencia al ejercicio, ejercicio obligatorio, ejercicio excesivo.

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Physical exercise, in its modern conception, is presented almost as a moral imperative, a universal panacea whose health benefits are extensively documented (Ashdown-Franks et al., 2020; Sallis, 2015). However, behind the social promotion of exercise adherence and the pursuit of optimal well-being lies a profound paradox: a behavior that is intrinsically positive can become, for a minority of individuals, a maladaptive, destructive, and potentially addictive pattern. Although exercise addiction is not currently recognized as a mental disorder in the main clinical manuals (American Psychiatric Association, 2013; World Health Organization, 2025), a substantial body of research suggests that physical exercise may indeed become problematic (Juwono & Szabo, 2021; Sicilia et al., 2023; Szabo et al., 2025).

The variety of perspectives and theoretical models used to examine the problematic nature of exercise has resulted in a broad set of terms referring to the phenomenon, including, among others, "exercise addiction" (Szabo et al., 2019; Terry et al., 2004), "exercise dependence" (Hausenblas & Symons-Downs, 2002a, 2002b), "exercise commitment" (Corbin et al., 1987; Davis et al., 1993), "compulsive exercise" (Meyer et al., 2016; Taranis et al., 2011), "obligatory exercise" (Duncan et al., 2012), and "morbid exercise" (Alcaraz-Ibáñez et al., 2020; Szabo et al., 2018). Behind these terms lies a variety of conceptualizations that reveal the absence of a clear consensus regarding the definition and operationalization of the construct (Sicilia et al., 2021). In different publications, we have adopted the term problematic exercise as a broad, generic label (Alcaraz-Ibáñez et al., 2024; Sicilia et al., 2021, 2022). This term functions as an umbrella concept encompassing any form of exercise that entails impairment or dysfunction for the individual. It allows progress in the study of this phenomenon based on the only existing consensus: that exercise can become a pathogenic behavior with negative consequences for a minority of individuals.

Problematic exercise accurately describes the point at which the individual loses control over the activity, turning it into an obligation. The pattern becomes problematic because the person persists in exercising despite experiencing physical, psychological, social, and emotional problems. Whether progressively or abruptly (Dinardi et al., 2021; Egorov & Szabo, 2013; Freimuth et al., 2011), exercise becomes an obsession that dominates daily thoughts and actions, leading to conflicts with family members and even neglect of essential obligations such as study or work. Exercise becomes problematic not merely because of excessive zeal or dedication, but because it may undermine the individual's fundamental psychological needs, turning movement into compulsion and well-being into a source of distress.

Over the decades, together with a large team of doctoral students and colleagues, I have devoted considerable effort to studying the motivation underlying exercise and the challenges inherent in exercise adherence (Alcaraz-Ibáñez et al., 2020, 2021, 2024; González-Cutre & Sicilia, 2012; Sicilia et al., 2018, 2021, 2022, 2023). Despite a dominant discourse claiming that exercise behavior is inherently healthy (Sallis, 2015), over time we have observed that, for some individuals, what begins as a pursuit of well-being can turn into a profound paradox. Physical exercise, universally promoted as a moral imperative and a health panacea (Cairney et al., 2018; Crawford, 1980), holds the potential to become a maladaptive and destructive pattern for a minority, giving rise to physical, psychological, social, and emotional problems (Sicilia et al., 2023). This intellectual journey, which critiques the tyranny of perfect exercise adherence, has left us with several crucial lessons that delineate the true profile of this phenomenon. In this brief article, I focus on four of these lessons.

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I. Exercise as a Mechanism for Escaping Life Problems

Exercise behavior does not become problematic because of the time spent or the intensity of the act itself, but because of the loss of control over the behavior and the functional impairment it causes in the individual's life (Dinardi et al., 2021; Sicilia et al., 2023). Problematic exercise usually manifests as a strong desire for physical activity involving a lack of control expressed through physiological symptoms and/or psychological problems such as anxiety and depression (Griffiths, 2005, 2019).

To understand the etiology of this possible disorder, our team, along with other research groups, has explored the role of motivation based on Self-Determination Theory (SDT) (Deci & Ryan, 1985, 2000). From the perspective of basic psychological needs (Ryan & Deci, 2000), problematic exercise operates as a mechanism of escape and mood modification in response to the need for emotional regulation (Dinardi et al., 2021; Egorov & Szabo, 2013). One of the central components of problematic exercise is mood modification (Griffiths, 2019). Individuals use exercise to achieve a subjective alteration in their emotional state. Excessive exercise becomes a means of distracting oneself from life problems, acting as an escape mechanism. In primary problematic exercise, the motivation is not the pursuit of pleasure but avoidance. Exercise becomes a way of escaping from a persistent, distressing, and/or uncontrollable source of stress (Egorov & Szabo, 2013). When this emotion regulation behavior is interrupted, unpleasant withdrawal symptoms emerge—bad mood, anxiety, irritability—which are relieved only by exercising again.

Although SDT posits that more self-determined forms of motivation (such as integrated regulation and intrinsic motivation) should lead to positive outcomes (e.g., healthy exercise), some studies have shown a positive association between these self-determined forms and problematic exercise, much as is the case with non-self-determined forms such as introjected regulation (González-Cutre & Sicilia, 2012; Sicilia et al., 2018). This apparent inconsistency requires consideration of other factors, with passion being a key construct mediating this relationship (Sicilia et al., 2018).

The Dualistic Model of Passion (DMP) (Vallerand, 2012, 2015) distinguishes between obsessive passion and harmonious passion, which reflect the way individuals internalize the activity. Obsessive passion represents a controlled internalization, fostering an inner compulsion and a rigid, conflictive commitment to exercise, which positively predicts different symptoms of problematic exercise. By contrast, harmonious passion implies an autonomous internalization that allows flexible participation, compatible with other life domains, and is associated with a lower risk of problematic exercise symptoms.

Our studies have shown the mediating role of passion in helping to explain the apparent contradiction between self-determined forms of motivation and problematic exercise. Specifically, our findings indicated that introjected regulation and, notably, integrated regulation (a self-determined form of motivation within SDT), showed positive direct and indirect effects on problematic exercise through obsessive passion (Sicilia et al., 2018). In contrast, although integrated regulation and intrinsic motivation positively predict harmonious passion, harmonious passion in turn exerts negative indirect effects on problematic exercise (Sicilia et al., 2018). These findings show that, in explaining problematic exercise, it is essential to consider not only the degree of internalization of exercise behavior, but also the quality of that process (in terms of obsessive or harmonious integration with other life domains) (Vallerand, 2015). Considering how exercise is integrated into the rest of the individual's life domains helps clarify why self-de-

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termined forms of motivation in a specific context such as exercise may, under certain conditions of internalization, be positively associated with problematic exercise (Sicilia et al., 2018).

Within the same SDT framework, it should be borne in mind that the essence of problematic exercise behavior is a pattern that reflects a deficiency in the individual's general basic psychological needs (Deci & Ryan, 2000). Problematic exercise reflects uncontrolled behavior and a failed effort to limit or reduce activity (Sicilia et al., 2023). Diagnostic criteria translated from substance dependence define problematic exercise by the presence of persistent desire (craving) or unsuccessful efforts to cut down or control exercise practice (loss of control) (Griffiths, 2005, 2019). In addition, there is an intrapersonal conflict in which individuals are aware that they should reduce their exercise but are unable to do so, experiencing a subjective loss of control. This lack of control undermines the individual's autonomy over their own behavior.

Beyond limitations in autonomy, problematic exercise often reflects deficits in the needs for relatedness and competence in life (Deci & Ryan, 2000; Ryan & Deci, 2000). In this way, exercise may become the most important activity in the individual's life, dominating other facets of living (Griffiths, 1997; Szabo et al., 2018). This leads to a reduction or cessation of other social, occupational, or recreational activities. Research has shown that excessive exercise may cause not only physical injury, but also neglect of important daily responsibilities, whether work-related or family-related (Baker et al., 2023; Griffiths, 1997; Szabo et al., 2025). The real critique of adherence is that, although the activity may be perceived as a pursuit of competence or mastery, when it results in impairment of the individual's psychological, social, or behavioral functioning, such adherence undermines holistic well-being. Put differently, the individual may appear to be happy and to have all their basic psychological needs satisfied within the specific context of the exercise environment. However, this may simply indicate that exercise is serving as a refuge, a release valve, from broader life problems and deficiencies (Vallerand, 2008). Therefore, when we refer to problematic exercise, it should not be understood as meaning that the problems lie within the exercise environment itself, but rather that the behavior causes significant and ongoing impairment in the individual's overall well-being. If excessive exercise caused no negative consequences and the experience were always positive, it would make no sense to speak of problematic exercise.

II. Instrumental Exercise: The Tyranny of Body Image and External Motivation

A crucial challenge in recognizing that exercise, under certain circumstances, can have harmful consequences for some individuals is to examine its interdependence with other mental disorders. This has led to a distinction between a problem derived from exercise itself (what has been termed primary addiction) and the use of exercise as the manifestation of an underlying mental disorder (exercise as an instrumental means or secondary exercise addiction) (Sicilia et al., 2021; Veale, 1995).

Problematic exercise becomes instrumental when it is used as a means or vehicle to achieve an end characteristic of another disorder. The association most traditionally recognized is with eating disorders (anorexia, bulimia) (Dittmer et al., 2018; Meyer et al., 2011). In these cases, exercise functions as a tool for controlling weight or caloric intake. This instrumental and unhealthy use of exercise constitutes a direct critique of adherence driven purely by external motivation. The individual adheres to the activity not because of its intrinsic benefits for health

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or competence, but because it enables the perpetuation of the goal of an underlying disorder. Specific characteristics have been described for excessive exercise associated with eating disorders, such as using this behavior for weight control and the rigidity of the behavioral pattern (Goodwin et al., 2011; Meyer et al., 2011).

We have been highly critical of the way secondary problematic exercise is understood (Sicilia et al., 2021, 2023). We argue that the instrumental use of problematic exercise is not limited to eating disorders. More recent studies have linked problematic exercise to excessive concerns about body image (Alcaraz-Ibáñez et al., 2020, 2021; Cena et al., 2019; Oberle et al., 2018). Documented associations exist with body dysmorphic disorder, and it has even been suggested that muscle dysmorphia could be reclassified as a form of problematic exercise related to body image (Corazza et al., 2019; Foster et al., 2015). Extreme concern for health may also manifest as orthorexia nervosa, which has been linked to exercise addiction (Cena et al., 2019; Oberle et al., 2018). Therefore, any attempt to define and promote healthy, non-instrumental exercise based solely on the absence of eating disorders would be limited, since it would fail to address the possibility of other disorders associated with body image, body care, or other motives yet to be discussed. In these contexts, exercise is a manifestation of a distorted psychological need, driven by external goals related to weight, shape, pride, others' recognition, and so forth, rather than by a genuine need for competence or health.

III. Problematic Exercise Transcends Individual Pathology and Also Reflects a Sociocultural Character

Problematic exercise goes beyond the framework of individual psychological pathology and should also be understood as an expression of a broader biocultural regime that prioritizes performance, visibility, and metrics (Nicholls et al., 2025; Szabo et al., 2025). In a recent paper (Sicilia et al., 2026), we suggested that problematic exercise is configured and perpetuated within a culture oriented toward performativity (Andreasson & Johansson, 2014; Ball, 2003; Thualagant, 2016), which uses judgment, comparison, and achievement as mechanisms of cultural control and regulation. Unlike other problematic behaviors (e.g., compulsive gambling or pornography addiction) or substance use (e.g., marijuana, tobacco, heroin), excessive exercise is often culturally celebrated and associated with discipline and self-care, which complicates the distinction between healthy dedication and pathological compulsion (Brossard, 2019; Moreau et al., 2023; Nicholls et al., 2025).

However, pressure is exerted both externally by coaches, peers, and family members, who prioritize outcomes over holistic health, and internally, as this culture of performance may be internalized by the individual and shape a strong identity around the exercise modality practiced. The internalization of these cultural values turns the body into a project that must be constantly improved and whose discipline is taken to reflect the individual's moral character (Crawford, 1980; Shilling, 2010).

Although excessive exercise sometimes has direct interpersonal consequences, such as conflicts with partners, friends, and family, and distancing from loved ones due to the time and focus invested in exercise, the compulsion to exercise is maintained and justified through discourses of health and morality (Moreau et al., 2023, 2024). This ideology individualizes responsibility for health and turns it into an existential duty. Under this discourse, inactivity is perceived as a moral failure or a sign of weakness, generating anxiety and a sense of guilt by omission in the

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individual (Cairney et al., 2018). This social rationalization of exercise—where the virtue associated with self-care is used to mask rigidity and conflict—demonstrates that problematic exercise is not merely an individual matter, but the manifestation of an addictive behavior deeply shaped and sanctioned by a sociocultural context that glorifies performance and continuous self-improvement.

IV. Measurement and Treatment: The Need for Clinical Context

The complexity of diagnosing the problematic nature of exercise is reflected in the lack of consensus regarding its conceptualization and measurement. Self-report instruments such as the Exercise Dependence Scale (EDS; Symons-Downs et al., 2004) or the Exercise Addiction Inventory (EAI; Terry et al., 2004), both based on substance addiction models, are screening tools. However, despite their widespread use in research on this phenomenon, it must be emphasized that a high score on a questionnaire measuring problematic exercise is not equivalent to a definitive diagnosis. Elite athletes, for example, often obtain high scores because of their strong professional commitment (Szabo, 2018), which does not necessarily imply greater morbidity. Hence, the need to distinguish between normative exercise in context and pathological exercise.

The challenge for the future is twofold. First, a clear definition is needed of the functional impairment that problematic exercise may involve (Sicilia et al., 2021). Criteria should consider only those elements surrounding exercise behavior that result in functional impairment, psychological distress, and/or a clear deviation from normative behavior in context (Billieux et al., 2015; Kardefelt-Winther et al., 2017). Second, a clinical interview is necessary for diagnosis. Analysis of the individual context and the subjective meaning attributed by the individual through a clinical interview is crucial. Self-report scales have limited diagnostic value because there is a gray area between risk and disorder that can only be clarified by evaluating the real harm the behavior is causing in the person's life.

In terms of treatment, problematic exercise cannot be addressed through the simple elimination of the behavior, since exercise is a behavior that provides health benefits when performed appropriately (Sicilia et al., 2023). In fact, exercise is used as an adjunctive treatment for other addictions and disorders such as anxiety, stress, and depression. Intervention, therefore, should not seek to suppress the need to move, but rather to restore control over it and to re-educate it. Moreover, the problematic source of exercise does not necessarily stem from motor action itself; problems may also exist in relation to the sense of belonging and identity that the exercise environment provides for the individual.

Final Reflections

The analysis of problematic exercise confronts us with one of the most pressing paradoxes of contemporary health: a behavior universally promoted and essential for well-being, such as physical exercise, can degenerate into an addictive, destructive pattern and a source of distress for a minority. The lessons drawn from this work show that the toxicity does not lie in motor action itself, but in the quality of motivation, the rigidity of commitment, subjective perception, and the sociocultural context that shapes it.

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The study of problematic exercise compels us to confront the idealization of movement as an unquestionable good. The most crucial lesson is that exercise adherence, elevated to the status of a moral imperative, can become a form of personal tyranny when it is detached from autonomy and instrumentalized for ends unrelated to integral well-being. In our work, we have found that motivation, even when it appears self-determined, is insufficient to predict healthy behavior if it is contaminated by obsessive passion or if exercise is used merely as an escape mechanism in response to deep psychological deficiencies in life. In such cases, exercise is less an act of self-care than a symptom of internal conflict.

There is a need to act in two directions in both research and intervention. First, we must resist the sociocultural pressure that celebrates compulsion under the label of discipline and self-control. Second, treatment cannot seek the mere elimination of the behavior, given that exercise is itself a valuable therapeutic tool. Intervention must focus on restoring control, re-educating motivation, and, fundamentally, addressing the underlying deficits in the individual's basic psychological needs, ensuring that exercise is integrated harmoniously and flexibly with the rest of the domains of the person's life.

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