Apathy Following Traumatic Brain Injury

Sergio E. Starkstein, MD, PhD[a,*], Jaime Pahissa, MD[b]

KEYWORDS

• Apathy • Traumatic brain injury • Depression • Cognitive deficits
• Psychotropic medication • Psychotherapy

KEY POINTS

- Apathy is a frequent behavioral complication of traumatic brain injury (TBI) and may be present in at least half of patients at some stage of the post-TBI period.
- One of the most important limitations to diagnose apathy in TBI is the lack of specific scales to rate the severity of this condition in TBI and the lack of validated diagnostic criteria.
- Apathy in TBI is significantly associated with both depression and cognitive impairments but may also present as an independent phenomenon. One of the major complications of apathy in TBI is its negative impact on rehabilitation efforts.
- Anecdotal evidence suggests that psychostimulant medication may be of use in some patients with TBI, and there is an urgent need for proper randomized controlled trials for pharmacotherapy and psychotherapy to be conducted in TBI.

INTRODUCTION

Traumatic brain injury (TBI) may result in significant emotional and behavioral changes, such as depression, impulsivity, anxiety, aggressive behavior, and posttraumatic stress disorder.[1] Apathy has been increasingly recognized as a relevant sequela of TBI, with a negative impact on the patients' quality of life as well as their participation in rehabilitation activities. This article reviews the nosologic and phenomenological aspects of apathy in TBI, diagnostic issues, frequency and prevalence, relevant comorbid conditions, potential mechanisms, and treatment.

APATHY: DEFINITION AND PHENOMENOLOGY

Marin[2] was the first to suggest apathy as an independent neuropsychiatric syndrome describing apathy as a general reduction in motivation. Apathy was operationalized as

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[a] School of Psychiatry and Clinical Neurosciences, University of Western Australia, Fremantle Hospital T-7, Fremantle, Western Australia 6959, Australia; [b] Department of Psychiatry, CEMIC University, Valdenegro 4337, Buenos Aires 1430, Argentina
* Corresponding author.
E-mail address: sergio.starkstein@uwa.edu.au

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Abbreviations	
TBI	Traumatic Brain Injury
DSM 5	Diagnostic and Statistical Manual-fifth edition
ICD-10	International Classification of Diseases -10th edition
SCIA	Structured Clinical Interview for Apathy
AES	Apathy Evaluation Scale
LARS	Lille Apathy Rating Scale
FrSBe	Frontal System Behaviour Scale
NPI	Neuropsychiatry Inventory
MRI	Magnetic Resonance Imaging
DTI	Diffusion Tensor Imaging

reductions in goal-directed behaviors (eg, lack of effort, initiative, and productivity), reductions in goal-directed cognitions (eg, decreased interests, lack of plans and goals and lack of concern about one's own health or functional status), and reduced emotional concomitants of behaviors (eg, flattened affect, emotional indifference, and restricted responses to important life events).[3] Other definitions of apathy stress the emotional deficits,[4] such as absence of feelings with blunting and flattening of affective response. Levy and Dubois[5] focused on the behavioral deficits and defined apathy as an observable behavioral syndrome characterized by a quantitative reduction of self-generated voluntary and purposeful behaviors. They suggested 3 subtypes of apathy: emotional-affective, cognitive, and auto-activation. These behavioral deficits should occur in the absence of contextual or physical changes and should be reversed by external stimulation.

In conclusion, important questions remain unanswered regarding the nosologic position of apathy in neuropsychiatric conditions. It is unclear whether apathy should be considered a symptom or a syndrome, and it has yet to be included in the major psychiatric nomenclatures. Apathy is sometimes considered a deficit of motivation, a blunted emotional state, or a behavioral deficit excluding psychological components.

DIAGNOSIS OF APATHY

Apathy should be diagnosed only after a thorough psychiatric assessment including the evaluation of the individual's social and physical context. Marin and Wilkosz[6] made the important clarification that individuals greatly differ in terms of their goals, interests, and pattern of emotional display, which are all strongly related to relevant demographic factors, such as level of education, type of upbringing, social class, and age cohort. In the TBI rehabilitation setting, important factors, such as role loss, motor and sensory deficits, and cognitive impairments, can all impact on the patients' motivation to engage in activities.[7]

Apathy is not listed as a specific syndrome or symptom in either the *Diagnostic and Statistical Manual of Mental Disorders* (Fifth Edition) (*DSM-5*)[8] or the *International Classification of Diseases, Tenth Revision*.[9] Nevertheless, relevant phenomenological information has been collected during the past 2 decades; both Starkstein and Leentjens[10] and the European Psychiatric Association[11] proposed specific diagnostic criteria for apathy for use in neuropsychiatry (**Box 1**). The European criteria are similar to Starkstein and Leentjens', with 2 main differences: (1) they require symptoms from at least 2 of the 3 domains and the rather unclear concept that changes in motivation or emotion may be internally or externally generated.