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Short Communication

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Cognition, Anger Self-Control and Self-Management

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Introduction

Empathy and anger are two basic social emotions that modulate people's aggression risk. Within the ICD-11 "symptoms or signs involving mood or affect" (for Mortality and Morbidity Statistics of the World Health Organization), anger is categorized subsumed in "symptoms, signs or clinical findings, not elsewhere classified". Anger is defined there as "an emotional state related to one's psychological interpretation of having been threatened". Reactive anger and aggression are common in certain mental, behavioral or neurodevelopmental disorders. The experienced discomfort may range in intensity from mild irritation to aggressiveness, tantrums, ruminations and other responses.

The "theory of mind" establishes the ability for inferring other people's thoughts, wishes and intentions and use this information for interpreting and predicting their behaviour as well as for regulating and organizing one's own behaviour. When any other people's behaviour is observed, normally the observer's same encephalic neural group (the so-called "mirror neurons") will be activated, so that the "true", although supposed, intention of that who is being observed will probably be instantaneously intuited or even anticipated. This is how learning by imitating works.

This matter is important in psychopathology, since character features such as "symptoms or signs related to personality features" exist that favour the tendency to feel frequent or persistent anger. There are also certain symptoms and mental pathologies that in different degree distort the perception of others' intentionality and may favour deficient anger self-management. Furthermore, interpersonal problems will be core issues in many mental disorders, and attachment might be an important mediator in the social dysfunction of those affected when expressing uncontrolled anger [1].

Frequently, annoyance occurs after astonishment produced by stimuli perceived as threatening. The neural mechanisms underlying the complex biopsychological processes that are involved vary according to the characteristics of the particular experience of surprise or oddness [2], assuming that in such cases there will be reduced participation of the self-referential neural processing [3]. Associated with the character feature of often feeling anger, it has been proposed that there might be higher grey matter concentration in the encephalitic network including ventromedial temporal areas, posterior cingulate, fusiform gyrus and cerebellum [4].

On the contrary, the activity of the networks in default and saliency or prominence mode (saliency red), together with the central executive network, has been associated with improved anger self-control [5]. The default mode network is a functional network that is activated during periods of calm states and may be involved in introspection and planning [6]. The resting-state neural variability is considered a relevant marker of the brain functioning during any behaviour. The salience neural network is integrated in the anterior insula and cingulate cortex [7]. The front insular cortex integrates the convergent information of other brain areas. The activation of the salience red is linked to generating and evaluating ideas. The volume changes of the brain grey matter in people with mental, behavioral or neurodevelopmental disorders happen in very different places depending on individuals, although these differences are often aggregated into common brain systems [8].

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Polymorphisms in chromosome X of the enzymes monoamine oxidase (MAO)-A and, to a lesser extent, MAO-B have been related to aggression traits and suicidal tendencies. MAO catalyze the metabolism of dopaminergic neurotransmitters. Association has been noticed between genetic variation in three polymorphisms of the MAO-A and anger traits in suicidal males, as well as one replication for the functional variant rs6323 in females [9]. Nonsuicidal self-injury (NSSI), often linked to impulsivity and anger, may be self-driven and associated with new self-injury attempts, accordingly NSSI has been identified as a robust predictor for committing suicide [10].

In summary, the human being is a biological, biographical, social and cultural entity. Personal anger is considered as a complex emotional state that predisposes an individual to defense or attack. Personal anger is a body and cognitive-affective response to certain internal and external stimuli that can be rationally or irrationally managed and can be occasional or habitual. However, living with anger will be able to shape a stable and conflictive rather than resolute personality trait and to be a symptom of several disorders whether mental or not. Potential channels through which different strategies for emotional regulation (such as cognitive reevaluation, expressive suppression, relaxation and others) may influence various types of anger have been proposed [11]. So, to anticipate, modulate, self-manage, control one's own personal anger and, eventually seek treatment when it is excessive or habitual is a healthy decision.

Conflict of interest

There are no ethical conflicts or conflicts of interests.

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