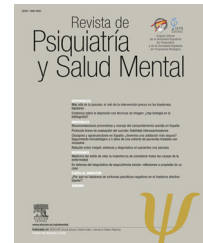




# Revista de Psiquiatría y Salud Mental

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## LETTERS TO THE EDITOR

### The different versions of the state-trait anxiety inventory<sup>☆</sup>



### Las diferentes versiones del inventario de ansiedad estado-rasgo

Dear Editor,

This letter attempts to bring attention to a possible source of error on the use and citation of one of the most often used questionnaires in our professional practice, the State-Trait Anxiety Inventory (STAI).

The anxiety inventory developed by Spielberger comes in 2 versions: the "STAI-form X"<sup>1</sup> version and the later "STAI-form Y" version.<sup>2</sup> In this second form, 37% of the original items are changed for other, simpler ones, improving the factorial structure of the scale. For example, in the "STAI-form X" original version, Item 23 indicates "I feel like crying", while in the "STAI-form Y" version the item reads "I feel satisfied with myself". As we see in this example, in some cases it is not only the content of the item that changes, but also the directionality of the score. Consequently, the correction in the scale is different and the results obtained using the 2 versions are not comparable.

Insofar as using the STAI in research studies, it can be seen that the version utilised in international contexts is the "STAI-form Y". However, in Spain the one used the most is the Sin embargo, "STAI-form X".<sup>3</sup>

This is possibly due to the greater diffusion that the "STAI-form X" has in our country, continuing up-to-date with its eighth version<sup>4</sup> and available commercially through TEA Ediciones, S.A. The psychometric properties of the test were even revealed recently.<sup>5</sup> The inventory enjoys great acceptance among professionals because of its simple administration and good psychometric properties. It should be pointed out that a Spanish translation of the Y form exists, available at *Mapi Research Trust* (<http://www.mapi-trust.org>), but it does not have published psychometric data.

Problems can arise in international multicentre studies, or when comparisons between results are performed without considering the fact that different versions might be involved, or if the exact version used is not specified.

This situation occurred in a multicentre study carried out at the Institute of Psychiatric Research (*Instituto de Investigaciones Psiquiátricas*, Bilbao-Fundación M. Josefa Recio). The focus was on attempting to evaluate the efficacy of the psycho-educational intervention, "EDUCA-III" (IRSCNTN: 32545295. IP: M. Martín Carrasco), on the overload of caregivers of individuals with severe mental illness, with the participation of Spanish and Portuguese populations. One of the result variables was measured using the STAI. However, while the case report form (CRF) in the Spanish sample used the X form, in the Portuguese CRF the Y form was inadvertently used. When this fact was discovered, in spite of having gathered data from both populations, the sample data from the smaller group, of Portuguese origin, had to be eliminated from the analysis of the variable.

For all these reasons, we recommend that you should always check the version of the scale being used and should identify it appropriately in any publication. Likewise, it would be a good idea to have the assessment data and psychometric properties of the "STAI-form Y" available in Spanish.

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## Charles Bonnet' syndrome triggered by brimonidine in a patient with Leber's hereditary optic neuropathy<sup>☆</sup>



### Síndrome de Charles Bonnet desencadenado por brimonidina en paciente con neuropatía óptica hereditaria de Leber

Dear Editor:

Charles Bonnet syndrome is a complex clinical entity consisting of the appearance of simple or complex visual hallucinations in patients preserving their cognitive state but evidencing great deterioration of eyesight.<sup>1-3</sup> Its incidence is increasing in our environment because of the growth of ocular pathologies such as age-related macular degeneration. Other pathologies (such as Leber hereditary optic neuropathy) that develop with serious sight deficits can present visual hallucinations. In the case we present, these problems were set off by the use of topical brimonidine (Alphagan®, Allergan, Madrid, Spain) for the treatment of ocular hypertension.

We present the case of a 30-year-old male, referred to the neuro-ophthalmology unit at our centre for visual hallucinations occurring during the previous month. The hallucinations consisted of people and faces that stared at him without speaking, with movement and in colour, with a history of a month; these coincided with starting treatment using topical brimonidine (1 drop every 12 h in both eyes [BE]) for ocular hypertension ocular diagnosed in his centre a month earlier. The patient specifically indicated that the hallucinations appeared 1 week after initiating treatment with the topical drug. He did not report any special pattern in the appearance of hallucinations, which were sporadic but on a daily basis, lasting an average of 15 min, and he did not present any other type of hallucinations. The patient had been diagnosed with Leber hereditary optic neuropathy in another centre. He did not report any other relevant personal antecedents or any known allergies.

In the examination, the patient presented visual sharpness in counting fingers at 1 m in BE, with normal anterior

pole in BE. The intraocular pressure was 25 mmHg in BE and 2 whitish papillae that looked atrophied could be seen in BE. The automated perimetry performed (OCTOPUS 1-2-3) revealed a terminal field of visual in BE. In the optical coherence tomography (Cirrus® HD-OCT, Carl Zeiss Meditec, USA), atrophy could be seen in the 4 quadrants of the papillae in BE. The patient was checked in the neuro-ophthalmology unit, carrying out a complete analysis and imaging tests, and other causes of hallucinations were ruled out. The treatment with brimonidine was suspended, due to poor tension control, and prostaglandin was substituted. The hallucinations disappeared partially after 72 h and totally at 1 week. The patient was diagnosed with Charles Bonnet syndrome secondary to treatment with brimonidine.

Brimonidine is a liposoluble  $\alpha$  2 agonist drug with the capacity to cross over the blood-brain barrier. Consequently, it can affect the central nervous system, producing symptoms such as somnolence, confusion and depression, and it can even produce coma in children. In patients having serious vision deficits, it has been described as the cause of visual hallucinations<sup>4</sup> that can be simple or complex, as in the case we present. Although the mechanism responsible is unknown, direct action of the drug on deafferented neurons as it passes through the blood-brain barrier could produce alterations in neuron stability that would trigger the hallucinations.

Although the cause is unknown, it is believed that the theory of deafferentation would be responsible for the development of the hallucinations. According to this theory, the loss of stimulation of the nerve cells in the retina from any ocular pathology would produce a loss of stimulation of the occipital cortex. The residual afferents would trigger the phenomenon of deafferentation, with anatomical, biochemical and histological changes in the synapses in an attempt to compensate for the lack of stimulation, being transformed into hyperexcitable.<sup>1-4</sup> In the face of specific stimuli (such as glare or darkness), different pathologies (anaemia or occipital stroke) or treatments (estrogens, tramadol or brimonidine), these hyperexcitable neurones would be stimulated, triggering the visual hallucinations in patients with serious visual deficits.<sup>1-4</sup>

In conclusion, we emphasise the side effects of brimonidine, which can produce visual hallucinations in patients with greatly deteriorated vision such as our patient affected by Leber optic neuropathy. The condition should not be confused with psychiatric pathology by ophthalmologists, neurologists, psychiatrists and family doctors, whose joint work is fundamental for the appropriate diagnosis and treatment of our patients.

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