

Degree of suggestibility and avatar embodiment in virtual reality. Individual differences in personality and therapeutic implications

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Objectives To analyze the existence of individual differences in suggestibility in relation to the Big-five factors of personality and to verify if there is a relationship between the degree of suggestibility and the intensity of avatar embodiment in virtual reality, evaluated with two types of self-reported measures (unidimensional and multidimensional).

Methods *Participants:* N= 34 healthy subjects (100% women) aged 21 to 60 years (M= 26.7, SD= 8.2).

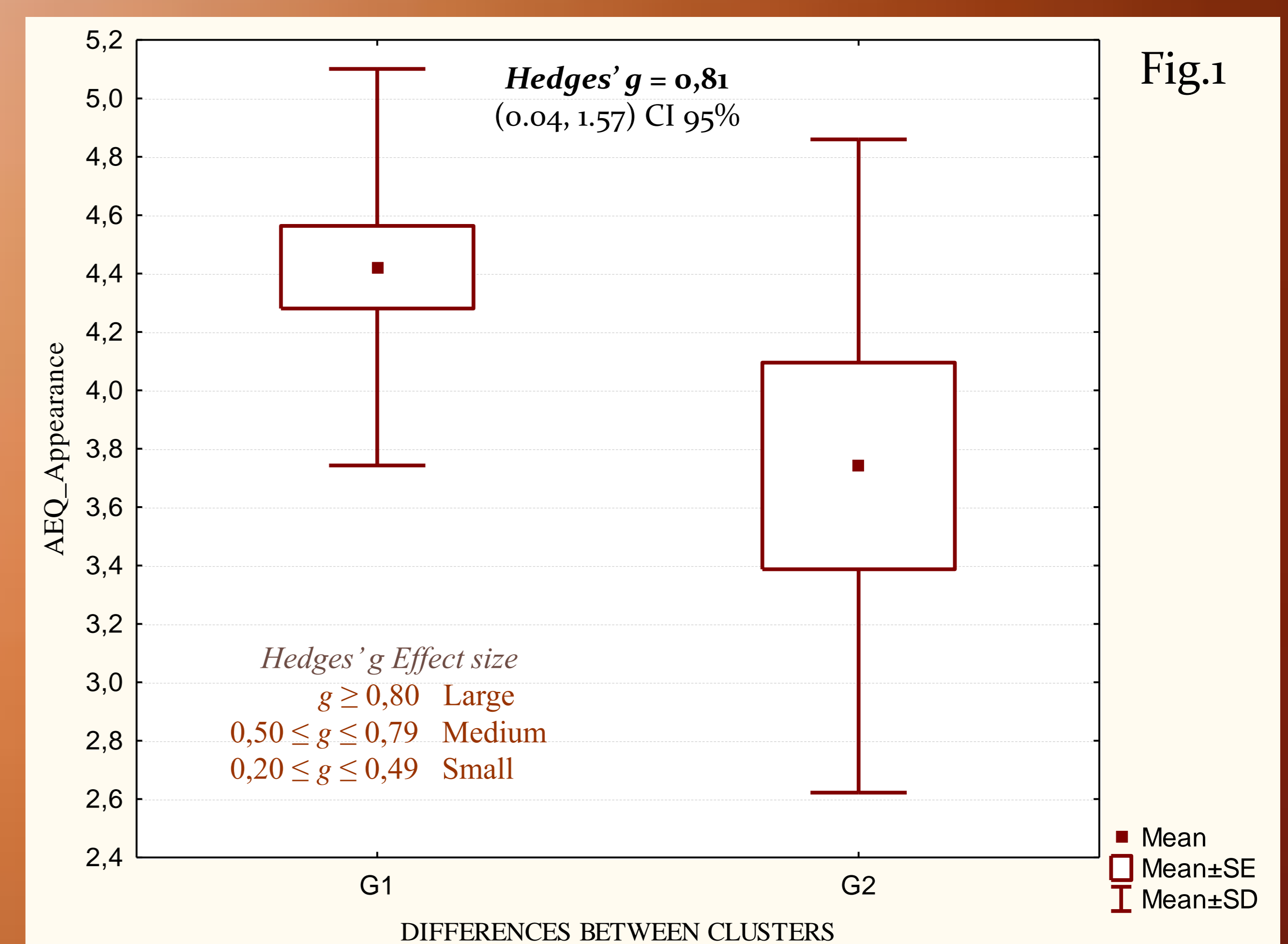
Measures: The Mini-IPIP Personality Spanish Short Form positively worded (Mini-IPIP-PW; Martínez-Molina & Arias, 2018; OCEAN). The Suggestibility Inventory (SI; González-Ordi & Miguel-Tobal, 1999; Fantasizing, Absorption, Emotional involvement and Influenceability). The multidimensional Avatar Embodiment Questionnaire (AEQ; Peck & González-Franco, 2021; Appearance, Response, Ownership, Multi-Sensory and Total). The unidimensional Visual Analog Scale of Full-Body Illusion (VAS-FBI).

PROCEDURE
Exposure to one's own body image through the creation of an avatar in virtual reality and the evaluation of the intensity of identification with it (sense of embodiment), from the induction of visuo-motor and visuo-tactile stimulation.

AVATAR: photographic reproduction (front and profile) of the patient's silhouette (height, weight, and BMI).
IMMERSION IN VIRTUAL ENVIRONMENT: HTC-VIVE Pro Eye 2 device reflects the avatar in a mirror (at 1½ m).
FULL-BODY TRACKING: use of 5 trackers (head, hands, feet) to make the avatar move like the real body.
FULL-BODY OWNERSHIP ILLUSION: induced with visuo-motor and visuo-tactile stimulation.

Software: AN-VR-BE

Results Participants with higher levels of global Suggestibility are characterized by a greater disposition to Openness to experience ($r_{SI-O} = .52$, $p < .01$) and Agreeableness ($r_{SI-A} = .44$, $p < .01$). Fig.1 shows that Group-1 (G1), characterized by higher Agreeableness and Openness, also reports greater identification with the Appearance of the avatar (AEQ-A). Emotional stability is the only personality dimension that is negatively and significantly correlated with Absorption ($r_{ES-SIa} = -.38$, $p < .05$) as a specific measure of suggestibility. The total multidimensional measure of avatar embodiment correlated significantly with the unidimensional measure ($r_{AEQ-VAS} = .55$, $p < .001$). Likewise, the unidimensional measure of avatar embodiment is significantly associated with global Suggestibility ($r_{VAS-SI} = .48$, $p < .01$), although this does not correlate with any multidimensional measure of avatar embodiment, nor this with any dimension of personality.



Conclusions The main therapeutic implication derived from this study is that evaluating the personality/suggestibility profile of people undergoing exposure treatments in virtual reality can optimize their efficacy, since such psychological variables seem to be involved in basic aspects of avatar embodiment, and this is a key condition for the effectiveness of these procedures.



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