The Key to Unlocking the Virtual Body: Virtual Reality in the Treatment of Obesity and Eating Disorders

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Abstract

Obesity and eating disorders are usually considered unrelated problems with different causes. However, various studies identify unhealthful weight-control behaviors (fasting, vomiting, or laxative abuse), induced by a negative experience of the body, as the common antecedents of both obesity and eating disorders. But how might negative body image—common to most adolescents, not only to medical patients—be behind the development of obesity and eating disorders?

In this paper, I review the "allocentric lock theory" of negative body image as the possible antecedent of both obesity and eating disorders.

Evidence from psychology and neuroscience indicates that our bodily experience involves the integration of different sensory inputs within two different reference frames: *egocentric* (first-person experience) and *allocentric* (third-person experience). Even though functional relations between these two frames are usually limited, they influence each other during the interaction between long- and short-term memory processes in spatial cognition. If this process is impaired either through exogenous (e.g., stress) or endogenous causes, the egocentric sensory inputs are unable to update the contents of the stored allocentric representation of the body. In other words, these patients are locked in an allocentric (observer view) negative image of their body, which their sensory inputs are no longer able to update even after a demanding diet and a significant weight loss. This article discusses the possible role of virtual reality in addressing this problem within an integrated treatment approach based on the allocentric lock theory.

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